VOL. XVI., SECOND SERIES. ROCHESTER, N. Y., MARCH, 1855. No. 3.

THE GENESEE FARMER,
A MONTHLY JOURNAL OF
AGRICULTURE & HORTICULTURE.

Volume XVI., Second Series, 1855

DANIEL LEE AND W. D. ALLIS, EDITORS.
JOSEPH FROST, HORTICULTURAL EDITOR.

EACH NUMBER CONTAINS 32 ROYAL OCTAVO PAGES, IN DOUBLE COLUMNS, AND TWELVE NUMBERS FORM A VOLUME OF 384 PAGES IN A YEAR.

Terms.

Single Copy,	$0.50
Five Copies,	2.00
Eight Copies,	3.00

And at the same rate for any larger number.

DANIEL LEE,
Publisher and Proprietor, Rochester, N. Y.

THE FEEDING OF CITIES.

THE city of New York contains some seven hundred thousand inhabitants, and it is estimated that they daily consume an average of half a pound of meat each, or three hundred and fifty thousand pounds a day, the year round. The state of New York contains many cities beside its great commercial metropolis, whose inhabitants live on the fruits of rural industry; and the feeding of our growing population in villages and cities, has already become a business of immense magnitude and importance. It is not at all probable, that any one will ever again see breadstuffs and provisions as cheap in this country, as they have been within the last ten years. Consumption presses too closely upon production, coupled with the rapidly increasing necessity of importing guano, or other costly manure, for any lasting low prices of grain or meat. Our farming lands have parted with so much of their elements of crops, and our cities have wasted so many millions of tons of the raw material of human food and raiment, that *cheapness* hereafter, as compared with former prices, is out of the question. It may take ten, twenty, or perhaps thirty years, for the denizens of cities, and the cultivators of the soil, to learn the true state of the case. Popular neglect, or ignorance, can not alter the facts as to the constant and ever-increasing draft made upon the soil to support an urban population. The latter make no adequate restitution to the land that both feeds and clothes them; and for this reason, if for no other, the market value of a bare subsistence in all American cities, will steadily advance from one decade to another. Farmers will not supply those that dwell in towns using the word town in the English sense with food, without being paid well for all the manure, lime, ashes, seed, and labor bestowed on their annual crops. A few cultivators may blindly sell all the elements of grain and provisions which their farms contain within reach of the plow; but so large is the number of consumers at home and abroad, that their folly will not, hereafter, greatly depreciate the market price of agricultural staples. Of course, we do not assume that the present uncommon prices are to continue, but simply that they will never again average for ten years together, as low as they have done for the last three or four decades.

How, then, can American cities be fed to the best advantage? Clearly, by combining tillage with stock husbandry, and fruit-culture, in a way to maintain intact all the natural resources of the soil, and augment the fertility of such lands as need fertilization. The most economical production of grain, vegetables, apples, and other fruit, as well as provisions, for city consumption, requires great skill in the use of manure. Agricultural plants have to be fed in some way not less than all animals; and how to feed them wisely and properly, is a question antecedent to that of feeding mankind in old communities. Unfortunately, the people who live in cities prefer to keep their local manure for breeding pestilence rather than prepare it for the economical use of farmers in the country, so that very little need be expected from that source.

To compensate for this loss of the cream of their farms, wasted in cities, farmers must soon charge two or three prices for their wheat, corn, hay, potatoes, pork, beef, and mutton, or quit their occupation.

In the interior of an Atlantic State where this article is written, guano is selling at sixty dollars a ton, and soda-ash is used for agricultural purposes at a cost of one hundred dollars a ton. At these prices for fertilizers, corn should sell at a dollar a bushel, and wheat at two dollars; and to this complexion the agriculture of all the older States is fast tending. The price of commercial manure will ere long govern that of all the great staples of the country. The one thing needful in farming is the raw material of crops; for the solid bones of domestic animals, and of men, can not be formed of simple water, nor of carbon, or moonshine. Bread and meat can never be cheaply produced on poor land until their elements are properly understood, and husbanded by nearly all consumers. With cheap and rich manure at hand, most cultivators would undertake to grow grain and stock at very moderate prices. But good manure is high wherever arated land is unproductive, and it will be higher before it is lower, for it is wasted in all cities and most villages in the most reckless manner. It is also wasted on a large majority of farms to an extent equally injurious to the public. A general reform both in town and country must take place, before agriculture can rest on a safe, or an improving system. Necessity will ultimately compel Legislatures to pay more attention to the farming interest, and to the diffusion of rural knowledge, than has yet been done.

ROOTS AND THEIR CULTURE.

Of the importance of a good supply of roots for the winter feed of cows and sheep, it is unnecessary at the present time to speak.

All good farmers will take suitable measures to provide liberally for their stock, the different varieties of food which are most conducive to thrift, and profit in feeding. At the prices hay and grain have borne the past season, fattening stock on them exclusively, has been, or would be, a losing business, so far as regards the matter of dollars and cents; but if the fattening of neat stock is mostly done by means of roots, and a little grain fed before the time of selling for the shambles, then in most cases, the reverse is true, and the manure left by fattening animals is so much additional gain.

It is necessary, also, to secure a variety of roots, as well as a sufficient quantity. The appetite of man and beast is cloyed with any one particular kind of aliment, and a change of food is indispensably necessary to secure the greatest possible benefit.

What kinds of roots should a farmer cultivate? Carrots, and sugar beets are an excellent food for milch cows; mangel wurtzels and ruta bagas for stock feeding generally. Carrots require to be sown in a light, deeply-tilled, loamy soil, and if it has been well manured the previous year for a crop of Indian corn, it is all the better. If manure is used to prepare the ground, let it be as well decomposed as may be, and thoroughly incorporate it with the soil by the roller and light harrow.

Be sure your seed is of the previous season's growth, if you would have a good stand of plants. You will want about two pounds per acre; sow in drills 16 inches apart, at a depth of about half an inch. As carrots are usually a long time in appearing above the surface, weeds have time to get the start if your ground and manure be not especially free from their seeds. To avoid this difficulty, the French translator of Von Thaer's principles of agriculture, says: "I am in the habit of spreading the seed after it has been rubbed between the hands, on a table in a warm place, but protected from the direct rays of the sun. It is then constantly covered with stable drainings for eight or ten days, in order that it may germinate as soon as put into the ground. To prevent the upper portion of the seed thus spread out from drying too quickly, and becoming deteriorated, instead of improved, I cover it with a small quantity of ashes, by which means the moisture is more completely retained. I also take care to keep the seed constantly moistened up to the time when it is put into the ground, and then quickly cover it up."

We have ourselves at times been much annoyed at the failure of seed to germinate; and the seedsmen who will mix 40 per cent. of old carrot seed with new, is really doing the cause of agriculture a great injury. What can be more provoking than after having taken pains to prepare ground, sow the seed, and find your labor and pains all of no account, by reason of bad seed? An excellent way to test seeds of all kinds is to put them between the earth sides of two sods, moisten with water, and in the course of a few days you can easily determine their worth. As soon as they can be perceived above the grounds, commence weeding. A few days delay may add one hundred per cent. to the labor. When fairly up, thin to the distance of four or six inches according to the variety used; and if your ground is in proper tilth and condition, you will have but little more to do until the time for gathering.

For table use, the French is preferred by many. Mr. BARRY, of the *Horticulturist*, says that it is generally preferred by the Parisian *cuisiniers*, or cooks.

For stock feeding, the long orange, and Belgian, or white carrot, can be grown. We noticed a patch of white carrots in the grounds of a neighbor last fall, at the time they were being gathered, and learned that from about two-fifths of an acre he had raised 325 bushels of the white variety; very fine, large, well-shaped roots. The white variety grows much more above the ground than other kinds, and is hence much easier to gather, but they should be gathered in time to avoid injury by frost.

Sugar beet, and mangel wurtzel seed should be soaked several days in luke-warm water, changed daily, until fitted for quick germination, and sown to a greater depth than is proper for carrots. They should be thinned so as to stand from six to nine inches apart in the rows, and the rows should be for the wurtzels from twenty to twenty-four inches apart. Wurtzels are the hardier beet, and will do better on strong clay soil than most any others, but whatever may be the soil, it should be deeply broken up and made loose and friable.

WHERE SHALL I PLANT MY ORCHARD?

THIS is a question which, though easily asked, is not so easily answered. To enter into all the details respecting the location of an orchard, preparation of the soil, choice of trees, their successful transplanting and subsequent cultivation, would require more space than we have at command. Our limits will only permit us to present a few brief suggestions as to location and preparation of the soil. It is not with fruit trees as with many other things cultivated. When frosts are over for the season we can sow our seeds in hope, and wait for the harvest, but especially, if we have the more tender and delicate kinds of fruit, we must guard against the effects of late spring frosts upon their tender buds and blossoms. And now let us advert to a common mistake respecting what is considered as a warm and sheltered spot. For a half-hardy plant you can not place it in a spot that will more probably insure its destruction, than to put it in a locality sheltered from northern winds, and fully exposed to the warm sun on a mild winter's day. We have repeatedly seen on our grounds the buds prematurely developed by a few days continuance of warm weather in March, and when a change of temperature took place, gone were our hopes of fruit for that season. During the intense cold of a winter's day after a severe frost, when the thermometer has sunk in the neighborhood of zero or below it, it is an essential point that the early rays of the morning sun should not strike upon the frozen buds, but that they should have time to thaw gradually. We are satisfied that effects often times attributed to an east wind, are due to the rupture of the tender cells of the bud, consequent upon the action of the sun's rays upon them, when their vessels are congested by intense cold. The lowest grounds are not the most free from the effects of a frost.

A few months since we saw an account of some experiments on the temperature of different localities, made by Lieut. MAURY, of the National Observatory. At the same time that a thermometer placed on a hill showed a temperature of 33° or 1° above the freezing point, a thermometer which was in a valley beneath, showed a temperature of 28° or 4° below. Not satisfied with the observations, he changed the positions of the thermometers and the result was the same. There was a difference in the temperatures of the hill and valley of 5°, a difference at the time of the blossoming of fruit trees which would save or destroy the germs of the crop. In the spring of 1852, by a late spring frost, the buds and blossoms on many fruit trees in low grounds were destroyed, while trees on hill sides and hill tops almost wholly escaped. A bud, while protected by its natural envelope can endure a great degree of cold without its vitality being impaired; but when influenced by the genial warmth of spring it has thrown off those protecting envelopes, and closely folded tissues, its power of enduring cold is gone, and it remains for the intelligent cultivator to aid in the protection of his budding fruits. By the radiation of heat into the atmosphere, the strata of air next the ground become colder than the other portions. These cold air currents following the laws of gravitation, descend to the lower portions of ground, and into the valleys, and then become in a manner stationary, while by currents moving briskly over any surface, radiation is prevented, and substances will remain at the temperature of the moving current. Arrest that current, and radiation will cause a greater degree of cold than is due merely to external temperature. So in these valleys and lower portions of ground, the temperature soonest becomes reduced to the freezing point, and consequently plants then growing must suffer. Every cultivator knows that corn on his low grounds is soonest affected by autumnal frosts, and the reason is obvious from the explanation just given.

The Hindoos, by availing themselves of the power of radiation, are able to collect flakes of ice in their tropical climate, when the temperature, as shown by a thermometer suspended but a few feet above the shallow ponds, has been all night long 4° above the freezing point. But as facts are of more avail than many words, we give the results of experience and observation, showing that low grounds and valleys are not the places where one should plant his orchard. An intelligent Scotchman, residing in this city, who has travelled much in Europe, informed the writer that he noticed that the best orchards, and those that seemed the most productive, were located on side hills, inclining towards the south and east. The sun has much more power in our climate during the summer, than in fruit raising countries of Europe, and indeed, in the southern parts of the Union it is necessary to protect the stems of our fruit trees from the sun. Many cultivators of the peach tree have found that if planted on a site fully exposed to the sun, it blossoms before the spring frosts are over, and endangers the crop. All are familiar with the fact, that a late and cool spring is generally followed by an abundant crops of fruit; and on the contrary, that warm dry weather in April, continued for any length of time, is pretty sure to force the buds into too active growth, and the crop is generally a failure. Again it has been noticed that late blooming apple trees have set their fruit, when the blossom of earlier trees wholly failed of setting a single blossom. It seems then most advisable to plant an orchard, not in the warmest and earliest soils, but in those localities where, if possible, the period of blooming will be somewhat retarded; side hills to be preferred, but on no account if any other location can be had to set them on low grounds. If compelled so to do, let the soil be thoroughly underdrained, and well manured with ashes and muck compost; for cold wet soils almost invariably induce canker and disease, from which a dry soil, and one properly supplied with the elements of a healthy growth, are almost wholly exempt.

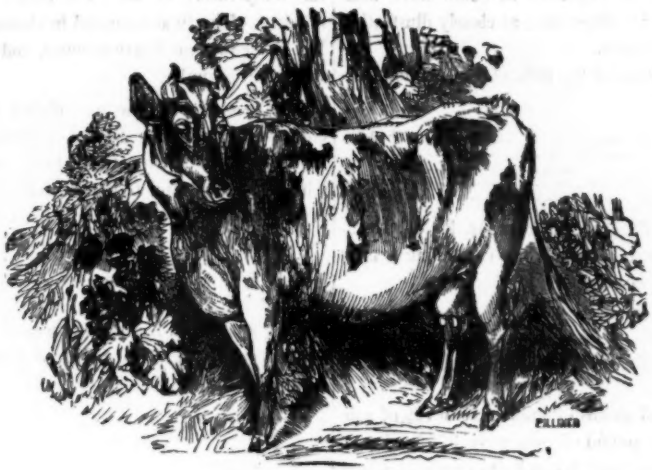
Since the above was written we have met with the following, in the address of J. A. Matson, Esq., before the Greencastle Horticultural Society, Indiana, which we append:

"Another subject on fruit culture, which has always been of great interest, and has become much more so within the last two years, is the destruction of fruits by hard freezing in winter, and by the late frosts of spring. Nearly all the orchards planted by the early settlers of the west, were located in the valleys, and wherever practicable near the margin of some river or stream of water. This was done under the impression that the effects of the frosts would be neutralized by the fogs arising from the water, and resting over the valleys during the morning; and by the protection afforded by surrounding hills, from the cold winds.

"Fruit growers in the west, after witnessing the repeated destruction of their crops, in the valleys, while the trees located on the bleak tops of the surrounding hills, were bending down with their luscious burdens, have now discarded the theory with which they set out.

"During the last fall, I witnessed a more striking illustration of the comparative effects of frost, on low and high lands, than has ever before met my observation. On the morning of the 6th of September, the temperature became lower in this region than is usual at that season of the year. A few days afterwards, in passing down the Bloominton road, I crossed a long and beautiful intervale, between the National road and Cloverdale. The fields along the road, were planted in corn; and in the lowest part of the valley, the frost had killed the blades, the top of the stocks, and the husks of the corn, which were dry and rattling in the breeze, while upon the elevated land, on either side, the corn was green and growing, the effect of the frost becoming less and less apparent, as you ascended on either side. Believing that some of the high grounds around this valley, must be very secure from the effects of late spring frosts, I have made inquiries from some of the earliest residents of the county, and find that there are two orchards in the neighborhood, where the peach trees have borne fruit, nearly every year, since the settlement of the county. I understand there were two other locations in the county, where the frost has been nearly as scarce, one in the neighborhood of New Maysville, and the other near Pleasant Garden. It is my purpose during the coming summer, to examine these locations particularly, as well as another, still more elevated, in the adjoining county of Hendricks.

"Dr. Kirtland, of Ohio, a gentleman distinguished alike as a physician and as a horticulturist, some time since applied the test of science to the subject. Supposing that the severity of the frosts in the valleys, compared with its effects on the high lands adjacent, was caused by a current of warm air, rushing up from the low, to the high grounds, as the temperature decreased; stationed himself with a thermometer, lantern and watch, on a night, when a severe frost was expected, on a hill near Lake Erie, where the peach crop had never been killed; while his brother, was stationed with a thermometer, lantern and watch, in the valley below. Each made and recorded observations, every half hour during the night, and the result was as follows: From sun down, until nine o'clock, each thermometer indicated the same degree of temperature. At nine o'clock the mercury in the valley thermometer commenced sinking, while that on the hill, at the same time, began to rise; and the Dr. observed a perceptible current of warm air, flowing up from the valley. At twelve o'clock, the thermometer in the valley indicated 12 degrees lower temperature than that on the hill, and about the same difference was observed until daylight in the morning."



ALDERNEY OR JERSEY COW.

WHAT BREED OF COWS WOULD YOU RECOMMEND?

A QUESTION not so easily answered. A breed profitable in one locality may not be equally so when removed to another. Some of the best dairymen in this country give the preference to our native cows crossed with the Devon or Durham, according to the object sought in connection with the dairy. Good milkers can be selected from almost any breed, and by care and good keeping, you may get a good supply of milk from any one of them. Some years since, the Massachusetts Agricultural Society imported some Ayrshire cattle and distributed them in different sections of the State, but they have not answered the expectations of their importers. For northern States the Devons seem to combine as many good qualities as any others, being of a uniform color, quick, active, and hardy, and especially adapted for the yoke. In the south and west the Durhams are favorites, particularly for stock for the Eastern market. (The Alderneys or Jersey cows give the richest milk of any breed, though not so great in quantity.) Col. JACQUES, of Massachusetts, by unwearied pains and skill in breeding continued a series of years, was finally able to obtain a stock remarkable for their milking qualities, which he called the cream-pot breed. In 1842, he had a public sale of his stock, and the result was—so little at that time did the public appreciate his labors in their behalf—that he discontinued his efforts at improvement, and we know not now where his stock may be found. From the accounts published of his success in raising stock for dairy purposes, we think the public have been great losers in that they did not encourage him to follow up his plan, by giving remunerative prices for the stock for sale. All persons conversant with dairy matters are aware that there is a very great difference in the quantity of cream which can be collected from the milk of different cows. Were we about to establish a dairy, we should test the richness of the milk by an instrument designed for the purpose (Lactometer.) This instrument in its simplest form consists of a set of glass tubes 10 inches in length, and divided into one hundred equal parts. The tubes being filled with milk up to mark No. 1, and allowed to stand twenty-four hours, the per centage of cream in a hundred parts is read at a glance. To any one who wishes to buy a cow for dairy purposes, we think the cost of the instrument would be repaid in the purchase of a single animal.

It is a fact well established that there is a constitutional susceptibility by which certain cows not only yield a large quantity of milk, but also of superior quality. This power to secrete more and better milk being transmitted to offspring, those breeds are of the most value which possess these qualities in a superior degree. It very frequently happens that an inferior milker will consume an equal quantity of feed with one which yields a much richer and larger quantity of milk. Professor Emmons in the natural history of this State (part V. Agricultural) gives the results of several analyses, made by himself, of milk from different breeds of cows. Though the experi-

ments were not as extensive as could have been wished, yet they are important, as clearly illustrating the preceding remarks.

"The composition of the milk of the common variety of cows:

Water	88.19
Solid	11.10
Butter	4.00
Casein	4.00
Sugar	2.75

Analysis of milk obtained from Mr. K., of Greenbush, taken from the common tub containing a mixture from all the cows:

Water	88.49
Dry Matter	11.45
Casein	5.43
Butter	3.47
Sugar	2.55

"One thousand grains of milk gave 6.729 of ash. By churning, one pound of milk gave 375 grains of butter. The cows were fed on brewer's grains, wheat bran and screenings. The grains were old, having been of the previous autumn.

"Another analysis of the milk of his own cow, of the Dutch breed, made the 1st of February, 1851, gave the following results:

Water	86.92
Dry	13.07
Casein	4.56
Butter	6.63
Sugar	1.87

"It seems from many analyses that certain animals give a milk rich in butter, while others give milk rich in cheese or casein.

"Analysis of the milk of a Durham cow—the animal was five years old, and gave fourteen quarts per day—fed on cut hay, stalks and grains, and was, moreover, thin in flesh:

Specific Gravity	1030.4
Water	89.37
Dry	10.72
Casein	4.40
Butter	4.70
Sugar	4.72
Casein obtained by acid	4.08

The uniform composition of the milk in butter, sugar and cheese is worthy of remark.

"The analysis of the milk of an Ayrshire cow, regarded as one of the best specimens of the breed, was as follows:

Specific Gravity	1032.90
Water	85.94
Dry	14.06
Casein	4.65
Butter	5.42
Sugar	3.98

One thousand grains gave 7.24 of ash. The cream was thick and yellow, and the butter amounted by churning to 516 grains to the pound of milk. At the temperature of 56°, the butter came in eight minutes. The time occupied in churning the milk of Mr. K.'s cows was thirty minutes, and the butter was white and granular.

"In cheese making, the great object will be to secure cows which give the largest quantity of milk, for thereby we may expect to obtain the most casein with sufficient butter to impart richness to the cheese. A cow of the Ayrshire breed would be less profitable than the Durham, though her milk is richer.

"The milk of the Devonshire and some other varieties, not being obtained, was not analysed. The concluding analysis in his remarks was of the Alderney or Jersey cow, furnished by Mr. J. TAINTOR, of Hartford, Ct.

Specific Gravity	1031.1
Water	84.73
Dry Matter	16.27
Butter	8.07
Casein	5.02
Sugar	3.05
Ash	0.79

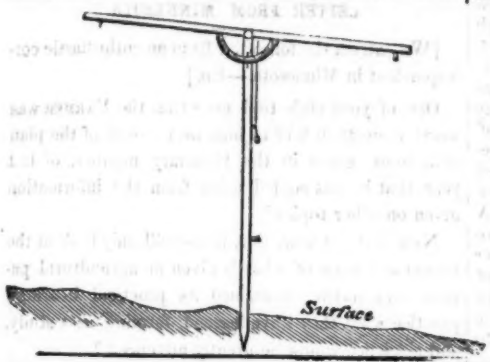
"It will be seen that the specific gravity is high—less water—large proportion of dry matter—quantity of butter remarkably great—while the casein is also above the standard of other cows. The butter was obtained by ether in the first instance, and afterwards by churning at the temperature of 68° Farenheit. The butter came in eight minutes from the commencement, but as he lost three minutes, it may be set down at five. The butter was in hard lumps, free from grains, of a rich yellow color, comparatively dry, and free from casein and milk. One pound of milk gave 706.79 grains of butter, equivalent to 9.33 per cent. The cow was not five years old, had recently calved, was in poor condition, had been fed upon hay all winter with four quarts of grain daily, and gave from eleven to twelve quarts of milk a day.

"According to the foregoing analysis, the milk obtained from the Jersey cows, would give 12.32 lbs. of butter weekly, as she yielded 154 lbs. of milk; while the Ayrshire would yield only 11 lbs. 11 oz. in sixteen days from 309 lbs. 11 oz. and 6 dr. of milk (according to a report of Prof. THOMPSON, published by order of the British government.) During an equal period, Mr. TAINTOR's cow would yield 352 lbs. of milk, or 28.16 lbs. of butter, which shows a balance of 18 lbs. in her favor. The Ayrshire from Mr. P. gave 516 grains of butter for 16 oz. of milk."

The cut represents an imported Alderney or Jersey cow, bred by Col LE CONTUN, of the Island of Jersey, the property of Mr. ROSWELL COLT, of Patterson, N. J.

DRAIN LEVEL.

We have repeatedly urged the utility and importance of drainage of farming and arable lands. By it (drainage) we warm the soil, remove surplus moisture, and what may seem paradoxical, we actually enable it to endure drouth better. A correspondent writes under date of Dec. 12, 1854: "I am just now much interested to see that from my underdrained muck land, the snow has nearly disappeared, while on



the adjoining fields it is now lying to the depth of six or eight inches." To drain successfully, the work must be well done, and faithfully. The usefulness of the whole drain is measured by its weakest part; hence, a little attention or neglect will cause much trouble and annoyance. We give below the following sketch of a drain level from the *Plough, Loom and Anvil*, and also append the remarks of Mr. R. L. Pell, before the N. Y. Farmers' Club, which will be found interesting as presenting the subject in a new light, from the *Western Horticultural Review*:

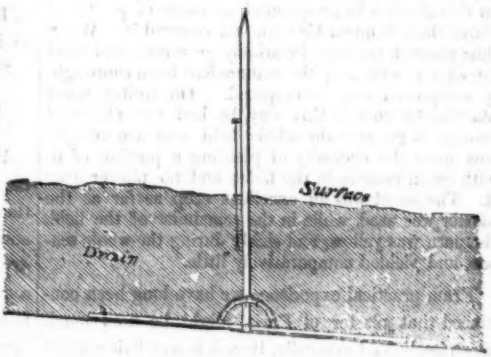
"We present our readers with the following sketch of a *Drain Level*, which for efficacy and simplicity is worthy the attention of drainers generally. The implement consists of an upright leg, a cross piece connected to the upright at its centre, a screw-joint, a vernier-scale, fixed to the cross piece and running in a slide on the upright, a sight attached to each extremity of and under the cross piece, and a plumb-line.

"The instrument should be stuck in the ground, and a stick of the same height placed where the drain is required; the two sights should be brought to bear on the top of the stick, and the instrument locked in that position by the screw-joint; the scale would mark the inches of fall per yard.

"By reversing the instrument, still locked, the workmen could use it in the bottom of the drain. When not in use, the cross piece could be detached, and the whole carried about as easily as a shovel or other working tool."—*P., L. and Anvil.*

"Mr. R. L. Pell said: At the last meeting I called your attention to ventilation as respects houses and other buildings. I will now speak of it agriculturally. You are all aware of the importance of oxygen in the germination of seed and growth of plants, and that it is necessary it should gain access to all parts of the soil, and to the roots of plants. The farmer facilitates the process by subsoil plowing, harrowing and working it. Still some soils absorb oxygen much more rapidly, and in greater quantities than others. Clay, for example, absorbs more than sand, and peats or vegetable mold far more than clay. This depends upon the porosity of different soils and their chemical constitutions. If the clay should happen to contain manganese or iron in the state of protoxides, it absorbs oxygen to combine with it, while the decaying vegetable matter takes in oxygen to aid its decomposition. Some soils likewise absorb heat much more rapidly than others, the temperature of which often amounts to from 111° to 130°, while the air in the shade is at 80°; black soils are thus affected, and consequently become warm first, and promote vegetation more quickly than others. We possess the power of coloring our soils, and thus gain this advantage where it does not naturally exist, by top dressing with roots, charcoal, or other dark substances, and at the same time render it capable of sustaining heat by a proper admixture of sand, and yet our hopes are sometimes disappointed. I had a piece of land of a sandy nature, situated on an eminence, which, notwithstanding all my endeavors to the contrary, refused to produce me anything more valuable than the detestable fire furze vine, and although there was no portion of my farm that apparently required draining less, I cut a good substantial drain through it, in the fall, five and a half feet deep, and stoned it after the most approved manner, then plowed the ground well, and the following spring sowed oats: the yield was sixty-six bushels per acre. Upon a subsequent examination I found the land contained copperas, which, during the rains of the fall, percolated through the drain, and left the land in a proper state to produce a crop.

"Sprengel says: 'A soil is often neither too heavy nor too light, neither to wet nor too dry, neither too



cold nor too warm, neither too fine nor coarse, lies neither too high nor too low, is situated in a propitious climate, is found to consist of a well-proportioned mixture of clayey and sandy particles, contains an

average quantity of vegetable matter, and has the benefit of a warm aspect and favoring slope. It has all the advantages, in short, which physical condition and climate can give it, and yet it is unproductive, because, says chemical analysis, it is destitute of several mineral constituents which plants require for their daily food, or contains some poison that must be carried off by a drain.'

"Now that I have shown the necessity of oxygen in a soil, I will state my experiment of ventilation, and its results. Two years since, I purchased twenty acres of low swamp land, which had been covered with water for centuries; I cut a main drain through it, and lateral drains ventilated every twenty feet, which carried off the water so perfectly that it became the driest part of the farm. The whole was planted with cabbages and potatoes. When they came to maturity, the cabbages growing on top of the drains weighed forty pounds, when those immediately contiguous, in the next row, only weighed twenty. The potatoes over the drain were far larger, and twice as abundant, as those in the rows next. A false dry drain was then constructed between two drains, with a view of observing whether the water passing through had any effect upon the growth of vegetation above the drain, and it was found by fair experiment that the result was the same above the dry ventilated drain, and the growth very superior to the adjoining rows."

PLASTER OF PARIS.

"The Editor of the *American Agriculturist* states that in conversation with a Mr. Chandler, he had learned how he could use green or unfermented manure in the hills of corn. Formerly, whenever he put unfermented manure in the hills, the corn, instead of growing thriftily, as is the case when well rotted manure is used in this way, would become yellow in color, and seem to be injured rather than benefitted by it. Having read that plaster of Paris would absorb, and change the action or nature of ammonia, he tried it in this way: After placing a shovel full of green manure in the hill, he covered it over with soil, and on this threw a large spoonful or more of plaster of Paris, then dropped his corn and covered it. When thus planted, the corn invariably grew rank and filled the ears as well as if the manure had been thoroughly composted and decomposed. On spring, when planting his corn in this way, he had not plastered enough to go over the whole field, and accordingly was under the necessity of planting a portion of it, with green manure in the holes, and no plaster over it. The result was an excellent crop as far as the plaster was used, while in the remainder of the field, the corn was yellow, and sickly during the whole season, and yielded comparatively little."

From practical experience we have long been convinced that plaster of Paris, might be used much more freely, and generally, than it is, as a fixing agent for the volatile portions of stable and yard manures. Containing as it does sulphur and lime, elements found in animal and vegetable tissues, the sulphur in the form of sulphuric acid unites with the ammonia present in the decomposition of manures, and renders a highly volatile gas, a stable product.

Those who are the most careful to save the elements of nutrition, will very soon find that they will have more to save, while those who allow the rain and sun, to dissipate the active agents of fertilization, and feed the soil with comparatively valueless manure, will get but little reward for their labor.

LETTER FROM MINNESOTA.

[We extract the following from an enthusiastic correspondent in Minnesota.—Ed.]

One of your club told me "that the Farmer was worth more than $50 to him, on account of the plan of a house given in the February number, of last year, that he has copied, aside from the information given on other topics."

Now is it not true, that if one will only look at the reason and sense of what is given in agricultural papers, and having examined its practical bearings, practice what they have learned, farming as a study, and a science would be greatly advanced?

I like farming and gardening above all other occupations; for what is there more pleasant for the heart of man, than to see the work of his hands, not forgetting the Almighty hand, prosper, and the wilderness to blossom as the rose.

In fact, such gardens as we can make in this country, and such results of farming operations as we can show, would do your heart good to see, say during the months of July, August, September, and October.

Last summer a farmer from your own Hudson river country, told me he could not raise such crops on the best lands at home, and with the highest cultivation, as I had on turf, broken up to the depth of five or six inches the same spring. C. G.

St. Paul, 1855.

LICE ON CATTLE.

For some time I have been a reader of agricultural works, and have seen many remedies for various things, and many directions how to rid cattle of lice, and have tried quite a number of them. I have used dry slaked lime, sifting it over the animal, then with a card or curry-comb, working thoroughly back and forth, that it may touch every part infested with the vermin, taking care that not sufficient be left on to loosen the hair. The lime will remain on for weeks if thoroughly done. I have tried it for several years, and always with good effect. A Subscriber.

Albion, January, 1855.

ITALIAN RYE-GRASS; ITS CULTURE & ADVANTAGES.

Mr. Editor:—The growth of Italian rye-grass, in small and isolated patches, has long been practiced in Great Britain; but, like many other instances, either smothered by the ignorance and supineness of the old school farmers, or reserved for enlarged introduction under the more intelligent and systematic agriculture of the present day, its cultivation, until within the last few years, has been very limited, and confined almost exclusively to those who have been regarded as mere experimentalists.

At the annual exhibition of the Yorkshire Agricultural Society, it is the custom (and one which the Societies of this province might adopt with advantage) at the council dinner, on the second day of the meeting, to introduce for discussion, in lieu of the ordinary complimentary speeches, some agricultural subject likely to excite attention; and as at this dinner there are generally from 200 to 300 of the most extensive and intelligent land owners and occupiers assembled, it forms an arena for the developement of practical and scientific knowledge which never fails to elicit the true value of the suggestions which from time to time are brought under review. It was on this occasion, in the year 1845, that the writer had the pleasure of hearing Mr. Dickinson, the extensive omnibus and cab proprietor of the city of London, and consequent owner of a large number of horses requiring much care and attention, introduce the subject of Italian rye-grass cultivation, and which formed the publicly recognized starting point of a practice that has gradually extended itself throughout the kingdom. Mr. Dickinson opened the subject by stating that he occupied a small suburban farm a few miles out of London, upon which he always had a large number of horses either as invalids, for change of diet, or as young stock, and that he had, at first, experienced considerable difficulty in providing for them a sufficient quantity of green food, until his attention was called, from some fortuitous circumstance, to the advantages of growing successive crops of Italian rye-grass. As a commencement he selected a portion of a small field of somewhat under four acres, adjoining his stables and infirmary, and suitably situated for distributing the liquid manure made on the premises over its surface, after each successive cutting. He was so perfectly satisfied with the result of this first year's trial, that he determined the second year not only to sow the whole of this field for green food, but also some of the other fields on the farm for hogs. As a sample of the *third* cutting of this second year's crop, he exhibited to the meeting (time, the first week in August,) a large bundle of the grass, upwards of three feet in length, and he stated that the fourth cutting would probably reach from 1½ to 2 feet in length before winter; adding as the conclusion of his address, "And now gentlemen when I tell you that 100 horses have never been able to consume the whole of the produce from this small field of about four acres, you will I think agree with me that this is a most valuable description of grass, and well deserving your attention."

Now this grass has many properties to recommend it to the farmers of Canada; it is hardy; of quick and successive growth; bears any amount of forcing by irrigation; and yet at the same time stands drouth well on sound and dry land, and is preferred by stock to every other description of grass. The writer has seen it grown with marked success under various circumstances—not only under the conditions adopted by Mr. Dickinson, but on high and dry land sheep farms, where it is now commonly sown as a portion of the seeding crop. Its early growth is a great advantage in a sheep pasture—fostering the smaller grasses—and it bears eating better almost than any other grass or clover, and sheep will select it in preference to all other kinds—and it stands well for two years. On these lands it does not, of course, attain that luxuriance of growth which it reaches on the better soils, and under favoring circumstances; but even on the light and dry lands it outgrows every thing else, and affords pasturage to the last when all the other grasses of the mixture are extinct. As a hay crop, grown under the ordinary system of cultivation, it would beyond all doubts greatly exceed the timothy grass in point of quantity, and there seems no reason why it should not in point of quality be its superior also. It is already attracting considerable attention among our neighbors in the States; and there are numerous situations in this country whereby drainage, and the arrangement of a simple and inexpensive plan of irrigation, it might be grown to its utmost limit of excellence; and where the profit of three or four cuttings a year from the same sowing would work a speedy conviction of its advantages. As a cow keeper's crop, it puts all others far into the shade, keeping the cows in high condition, and producing a plentiful supply of milk. From the daily diminishing facilities for depasturing cows within the limits of our cities and towns, by the rapid increase of buildings, and other appropriation of the open lots, the cultivation of Italian rye-grass, upon a very small area of land in proportion to the quantity of

food obtainable for the purpose, offers a ready and effectual means of meeting the increasing difficulty. By having the cows housed, and cutting the grass for them, and by adopting all the means for its cultivation which would thus be available, half a rod of land, if not less, would suffice to maintain a cow throughout the year, with a comparatively small addition of winter dry food.

Some few years ago the ability of this grass to endure drouth came for several months of a very dry summer under our observation; and was the more noticeable because of that time little or none had been grown in the district, and the owner of the land was thought to be far gone in agricultural hallucination to select so singular a course of seeding. The land was a light shallow loam, at all times perfectly dry, laying on the porous schale of the magnesian lime stone, at not more than from six to eight inches from the surface. The seed was sown with the barley crop in the usual way, and without any admixture of other grasses. After the barley crop was taken off the young seeds increased rapidly in strength, and afforded some excellent pasturage for sheep that fall; care being taken not to injure them by over stocking. In the following spring the field exhibited a most promising and luxuriant appearance, long before any of its neighbors shewed signs of returning vigor, and sheep were turned into it much earlier than common: as the season advanced both cattle and sheep were put in, and although the summer was very dry, the great amount of stock which this crop carried, throughout the whole season, was the astonishment of all who witnessed the experiment, and set an example to the district that was neither forgotten or neglected.

There are two or three descriptions of rye-grass, and therefore it is the more necessary to impress upon those who may be disposed to try its cultivation, that it is the kind commonly known as the *Italian*, which should be sown; none of the others possessing, in anything like the same degree, the properties and qualities of the Italian. If there be any difficulty in procuring the proper kind, or any doubt about its being true, the most certain plan would be to import it from England; and if through the medium of the seedsmen to the Royal Agricultural Society of England, (Messrs. Gibbs & Co., Half-moon Corner, London,) so much the more certainly would the best and truest quality be secured. In conclusion, it may be added that it is an essential element in the successful cultivation of this grass, that the land be in good condition and free from weeds.

Hamilton, C. W., 1855.

SEEDING OF LANDS TO GRASS.

Mr. Editor:—The seeding of lands to grass, to produce the best return to the farmer, is a subject of great interest. Involved in it, are several questions, on which various opinions are held by our best practical farmers. Some of them are as follows:

The best preparation of the soil—the best kinds of grass to cultivate, also their judicious mixture—the quantity of seed required per acre—the best season of the year for sowing, &c.

Now, I do not believe that any more definite rules can be given to guide the cultivator of the soil in this branch of agriculture, than can be given on various other subjects, respecting which, our science, wise writers have assumed to instruct the practical farmer, but whose instructions, experience has often falsified.

The various soils, climates, localities, and wants of the farmer, would modify or change any general rules which might be given, and I aver that no man who has not had experience or observation in all the various sections of our country, can write understandingly in giving systems of farming applicable to those sections. Enlightened experience is the best teacher, and from that mainly must the farmer deduce his system of practice. But each farmer may [permit us to say, *should*.—Ed.] communicate his experience through the press for the benefit of his brother farmers, and thereby they can mutually instruct one another.

My experience in seeding lands to grass, has been mainly in a calcareous wheat soil, and where hay is not a principal object; still the aggregate amount of seeding may be much greater than in a grass country, as the operation is much more frequently performed.

The best preparation for seeding, is a well cultivated winter-wheat field, summer fallowed, plowed early in the season, and soil thoroughly pulverized, or land which has been left perfectly clean by a spring crop. A reversed sod will not seed well; neither must grass sods, or roots, be left unsubdued.

Red clover and timothy are the kinds of seeds most used. Ten pounds of clover seed per acre may be sown in the month of March, or early in April, before spring frosts have ceased to affect the soil. I think the best proportion of seeds, and time of sowing, is from four to six quarts of timothy sown with the clover, if not sown the fall previous.

Some farmers object to sowing early in the fall, believing the grass will choke the wheat, which in moist soils where grass grows and spreads rapidly may be the case. In my own practice I prefer fall sowing.

Sow a bushel of gypsum per acre in the latter part of April, or early in May, on all new seeded lands.

By so doing, I have seldom failed in getting a good stand of grass, and in producing abundance of pasturage. It also adds to the quality of the hay.

The first crop will have rather too great a proportion of clover, but if cured in the cock rather than on the ground, the quality of hay will be good. The next season there will be less clover and more timothy. From one and a half to two tons per acre is my common average. Some farmers advise a larger quantity of seed, when seeding for meadows, but I have found that too much seed may be used in seeding for grass, as well as for wheat, corn, or any other grain crop.

In laying down wet lands for meadows, an equal quantity of timothy and red top, with a small mixture of white clover, is best. If seeding is required on spring crops, barley, rye, or spring wheat, sown early with a dressing of gypsum, will do, but I have had much better success by seeding on winter, than on spring crops; but in all cases, thorough cultivation of the soil is an essential requisite.

Sweden, 1855. F. P. R.

LETTER FROM VIRGINIA.

Mr. Editor:—It is strange that within thirty miles of one of the first settlements in the United States, lands should be sold for from five to ten dollars per acre—some of it as handsome timber land as can be found anywhere. And here is a nut for geologists to crack.

There are in this section, numerous beds of oyster, clam, and other shells, (which are here called marl beds) and at the depth of twenty or twenty-five feet from the surface, are found cast-iron pots and kettles, and parts of chains similar to our log chains; and the query is, how did they get there, and who were the people that used them?

Marl beds are found at a distance of one hundred and twenty miles back from the ocean. Has not this section of country at one time been the bed of the ocean? If so, was the earth upheaved by subterranean fires?

The mulberry tree grows and thrives here better than in any other locality I have ever seen. The soil and climate appear well adapted to its growth, and if I am not mistaken it is an excellent place for silk growing. I see nothing but skill and enterprise wanting to make this a desirable part of the country.

Having recently taken a farm here, I would be glad if you, or some of your able correspondents, would inform me what kind of grass would grow, and stand the severe drouths to which we are subject. I want something that I can rely upon. Our soil is deficient in lime, but that we supply with shell-lime. Corn and wheat are our principal crops, but they exhaust the soil. We can, and do raise two crops of vegetables in one season; but what we want is some kind of grass for pasturage, so that we can raise stock, make butter, cheese, pork, beef, &c.

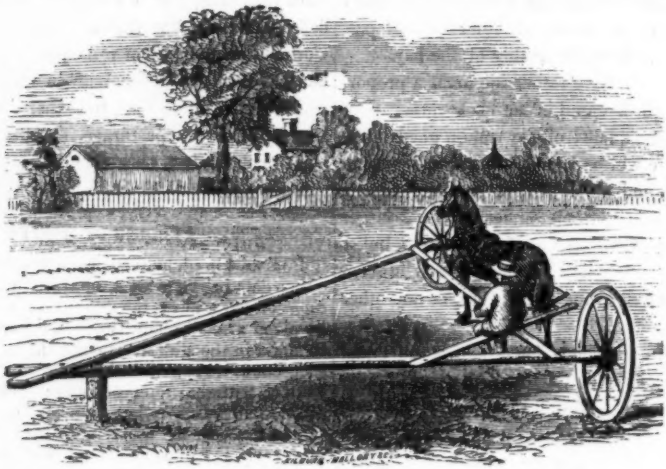
Prince George, C. H., Va. R. S.

FEEDING OF HORSES.

For working horses, we have found that cut straw, either oats or rye, with a mixture of oats and corn *chop* formed a most reliable feed; with this should be given a small quantity of long hay, if the horse is to stand in the stall during the day time. We have succeeded very well in keeping working horses, in winter, entirely upon cut corn fodder and a small mixture of *chop*, either oats and corn, buckwheat, shorts, &c. In the use of corn fodder for horses, the better way is to have a trough with a well fitting lid, and after the fodder is cut and put in the trough, pour upon it a sufficient quantity of *hot* water to get up a good steam, put on the lid for fifteen minutes, then open and sprinkle over the whole a quantity of the *chop feed*, and when the heat has subsided, this preparation forms an admirable morning or evening meal. We have also succeeded in piecing out a hard winter, by feeding to horses, cut rye straw and ground peas. This makes very hearty feed, and in localities where field peas can be grown, is well worthy the attention or horsemen. The practice of feeding constantly, to horses, corn in the ear, is unquestionably bad policy, both as to adaptation and economy. To a horse on travel, a feed once a week of ears of corn not too hard for chewing, may be of good service; but for constant eating, corn alone is not well suited to the nature of the horse, and except as above, we should always advise that all grains for horse, and stock feed, should be ground or chopped before feeding.

The above relates to animals in a healthy condition and fit for service. In order that farmers may avail themselves of the benefits of this method of feeding, the farm yard should be well supplied with feeding troughs, in which the preparations may be deposited, and disposed of without waste.—*Ohio Cult'r.*

Drainage.—I may be asked why I attach so much importance to drainage. Why, you might as well ask me why I attach so much importance to circulation, vital or monetary. Stagnant water, or stagnated air, are as ruinous to the plants as they would be to our own vitality. Fix a cork in the drainage hole of your flower pot, and you will soon have a practical illustration of my meaning. The sallow and bilious plant (like many turnip crops I know of, on undrained land) will show by their expression what is denied to them in speech. This is not the occasion to enter into subterranean examination of gravity, capillary attraction, æration, or filtration, much less of all those affectionate or repulsive interchanges, that turn air, water, and earth, into food for man and beast; but be assured, circulation is vitality—stagnation death and ruin.—*Mechi.*



BREAKING COLTS.

In the *Boston Cultivator* of Sept. 16, we noticed an engraving illustrating a new mode of breaking colts, by a Mr. Phineas Field. The mode of performing this work is so simple and so favorable, that we have made some improvements upon the engraving, and give the description in Mr. Field's own words. He says: "A little more than one year since, having three fine colts that were wholly untutored, I adopted a new expedient for bringing them into subjection, which succeeded to a charm. Several of my neighbors availed themselves of the privilege gratuitously offered them by the use of my apparatus in breaking their colts, and in every case they were delighted with the ease, safety and thorough success of the scheme. Last autumn, having bought another large and vigorous colt of three years past in age, and wishing to bring it under subjection, I resorted to the same method that was found so effectual last season, which has been equally satisfactory, both to myself and my neighbors, who have either availed themselves of the use of the apparatus, or have witnessed its operation; and in compliance with their suggestion, I send you a drawing of the *run-round*, now in rig in my yard for breaking colts. To the machine thus completed I harness the colt, I care not how ugly or ungained, buckling the pole strap so short that he will have no slack harness; then tying his halter to the cross-bar, I pull off his bridle and let him have a fair chance and his own course. He never runs at first, for fear of the wheel before him, but alternately trots and stand still. After the colt has been harnessed an hour or so, I seat myself astride the rear pole at the point where the inner end of the bar supporting the whipple-tree is attached, when he generally starts off at a rapid speed; I retain my seat until the colt comes to a stand, which is always after he has been from six to twenty rounds. I then feed him a handful of oats, and put a wisp of hay in the rope which confines the pole strap, and leave him to pursue his own course. He should be kept harnessed in this way through the day, being visited frequently with the oat dish, and supplied with hay, where he can help himself at will.

The second day let the colt be bridled, with leading lines attached, and fed a few oats as soon as harnessed, then left for some time to promenade at his leisure, then drove, and taught to start and stop at bidding. After being drilled in this way for half an hour, make fast one of the wheels to a post a little outside of the range, and leave him for an hour or more, thus teaching him to stand; keep him harnessed through the day, occasionally feeding, driving, backing, and teaching him to stop and to stand still, but using no harsh measures, for none are needed. After three such days of training, I have always succeeded in making a colt completely manageable, and hesitate not to take my wife on board a cutter or wagon for a ride, having done so repeatedly. I consider the above method for breaking colts cheap, safe, expeditious and effectual, and those who have examined the affair, say that a colt broken to go in that machine will go anywhere.

Explanation of the Drawing.—A post set firm in the ground, and rising three feet, with a shouldered three-inch round tenon or pivot at the top.

Two straight, rough, hard wood poles, thirty feet long, eight inches in diameter at the butt ends, and four inches in diameter at the tops. One of these poles is confined on the top of the post, six feet from the butt end by a round mortice, three and a half inches in diameter. The other pole is lapped into the first, near their butt ends, made fast by locking, and by a two-inch pin.

The hind wheels of a lumber wagon, fitted on the ends of the poles.

Crossbar, a rough pole twelve feet long, bolted at each end on the long poles, four feet from the wheel hubs.

Rough pole, bolted on one of the main poles and on the cross bar, to support the whipple-tree.

An augur hole bored through the forward pole, in which is fastened a rope for confining the pole strap of the harness."—*N. E. Farmer.*

THE CULTURE OF SWEET POTATOES.

I HAVE recently noticed frequent inquiries on the culture of the Sweet Potato. Having had some little experience in this branch of horticulture, I will briefly state the mode and the results.

Source of Seed.—This I always procure from the city of New York, to which it is, I suppose, in all cases brought from further south. I sometimes send directly there for it, and at other times procure it here from grocers who have recently procured it for retail here. Potatoes raised here are always too imperfectly mature to be preserved; they perish with a dry rot even when stored in small quantities, in dry sand, and in a cool and airy place.

Soil.—I have cultivated them in a light sand, a sandy loam, both of moderate fertility, and in a moist rich sand. I prefer the former, because it secures a slower growth and results in the earlier formation of tubers, and of course in a more perfect maturity than either of the others.

Mode of Growth.—The vine and leaf somewhat resemble a bean trailing over the ground. Perhaps it still more resembles wild buckwheat, though its leaf is larger and a yellower green. The vines often make eight feet in length in a rich and moist soil, though unusually four feet is as long as is desirable. In rich soil and moist weather they frequently throw down roots at intervals along the vines, which produce tubers at these points, and so fill the whole soil with tubers. This, however, is not desirable, as these scattering tubers are usually very imperfectly ripened. The tubers almost always stand up lengthwise in the soil, instead of lying horizontally, as in the case of the common potato.

Preparation y Culture in the Hot-bed.—Having procured your seed tubers, bury them in an ordinary hot-bed, about the 20th of April, in Central New York. Place them lengthwise, and nearly end to end, in rows across the bed, the rows about six inches apart, covering them about three inches deep with soil. In two or three weeks, according to the heat of the bed, each tuber will throw up from five to thirty sprouts close to the side of the parent. As soon as these are three or four inches high, take up the tuber carefully and break them off close to the parent, so as to save the side roots. The tubers may then be replaced for the production of a second and even a third crop of sprouts. Some prefer breaking them off in the ground, but I have always found it safe to take the tubers quite out of the ground for this purpose. This method of procuring plants is practiced even in the Southern States, since otherwise too many shoots would be produced. With us this mode becomes further indispensable as the only means of getting our plants sufficiently early.

Mode of Culture in the Field.—Plow your ground, and throw it into ridges five or six feet apart. This is needful—first, because your tubers, needing to spread sidewise, will form more readily than when penetrating deep into the soil; and secondly, they will thus be less likely to form roots along the vine. Set the plants on the ridge, about fifteen inches apart, inserting them in the soil just as though they were tomato or cabbage plants. Should the weather be hot, cover the newly set plants with any large leaves, as of pie-plant, balm of Gilead, &c. Hoe frequently until the vines cover the soil, but without increasing the height of the ridge. In wet and hot weather, it might be useful slightly to lift up the plants with a long, smooth pole, to prevent them from rooting.

I have not observed that the Sweet Potato is liable to disease, otherwise than, as a tropical plant, it fears cold and rainy alternations of weather.

Digging, Yield, Mode of Preserving, &c.—Dig as soon as the vines are killed by the frost. Spread the tubers thinly on a dry, cool floor, where they may often be preserved for gradual use until mid-winter.

I am not prepared to speak very positively of the yield. Undoubtedly it will usually be less than that of ordinary potatoes. In the hot, moist season of 1851, however, the yield was very large, and the whole cost of production not more than that of ordinary potatoes by the bushel.

Quality.—Here, after all, is the failing point of this crop. In a dry, warm season, when grown in rather poor, sandy soil, they are often quite eatable, and are very acceptable to those not accustomed to those produced at the South. Often, however, they are quite watery and stringy—so much so as to be utterly uneatable to all who have ever used a good article. For this reason I would not advise their culture as far north as Central New York; not at least until you strike the shores of the western lakes, where the summer is from two to four weeks longer, and allows the plant a proportionally longer period to mature its tubers.

I have written the preceding directions, not to encourage their culture, but to aid those who are determined to try that culture for themselves. Some of my directions will seem quite unnecessary to those familiar with their culture.—*C. E. Goodrich, in Horticulturist.*

GYPSUM OR PLASTER OF PARIS.

LEVI BARTLETT, in the *Granite Farmer,* says: Some fifteen years ago, we came into possession of the farm we now occupy; being short for manure, we made use of plaster on our corn, potatoes, and other crops, without perceiving any very marked effects from its use, and after two or three years trials, with it, we came to the conclusion that the soil of our farm did not need gypsum and we gave up the use of it. But some five years ago we thought there might be some benefit derived from the use of plaster, when daily strewn over our hovel floors, during the winter season, and we procured a cask of finely ground plaster (500 lbs.), and placed it in one of our hovels in which were kept through the winter ten head of cattle. A few quarts of plaster were daily sprinkled over the floor of the hovel which was nearly watertight. The same course we have pursued every winter since, from the belief that a portion of the volatile carbonate of ammonia, generated by the decomposition of the urine, manure, &c., would be *fixed,* or changed to sulphate of ammonia, which is not volatile. There seems to be a difference of opinion among agricultural writers, in respect to the action of gypsum, when mixed with guano, and other concentrated manures. Some contending that plaster will liberate the ammonia, while others say it will not. Which

party are right in this matter, we shall not here attempt to decide, but will state one fact about which there is no controversy; that is if liquid sulphuric acid and carbonate of ammonia, are brought in contact by mixture, decomposition will ensue, the carbonic acid of the ammonia will be driven off, and the free ammonia will combine with the acid, resulting in gypsum of ammonia.

In 100 lbs. of gypsum there is about 46 lbs. of sulphuric acid, (oil of vitriol.) It requires 400 lbs. of water to dissolve one pound of gypsum. From this it seems that 400 lbs. of water would only put less than half a pound of the acid in a favorable condition to combine with ammonia, for it is a very general law of chemical affinity, that when two substances combine chemically, *one of them must be in a fluid state.*

But we think that urine, especially while warm, possesses greater solvent power over the gypsum, than water at the temperature of 60°. In the rear of our cattle, in one of our hovels, there is a tight trough or gutter, 24 feet long, 14 inches wide, and 2 inches deep, in which the droppings of the cattle are received. If we put plaster in the gutter, and make no use of muck, or litter for bedding, in the course of 12 or 15 hours after the cattle have been in the hovel, there will be an inch or more in depth of urine in the gutter, (the ends being closed to retain the liquid,) and the surface of the urine is covered with a thin ice-like pellicle of carbonate of lime. This proves that the gypsum has been freely decomposed, the acid set free to combine with the ammonia, and the lime in its affinity for carbonic acid, rises to the surface of the liquid, as there is much of this acid in the hovels every morning.

But when we make no use of plaster, there is none of this ice-like stratum of lime in the gutter.

From the above facts, we are of the opinion, that we save in sulphate of ammonia, many times the cost of the gypsum, even if it has no other effect than the retention of the ammonia. But its value on some soils, and favorable effects upon the clover plant, justifies us in the belief, that it possesses other manurial qualities, aside from its power of combining with ammonia.

But to go back to the "supposed results" of our free use of plaster in our hovels and stables. We use our winter made manure, on land planted with corn, potatoes, and roots; followed the next year with grain, and grass seed.

The three past seasons have been remarkable for severe drouths in August and September, of each year, from which cause a large portion of the grass seeds sown by our farmers have been a dead loss in consequence of the young grass plants having been destroyed by the severity of the late summer drouths; but on our farm, the grass, especially the clover plants, have done as well as in wet seasons. We have stocked down to grass, dry hillocks and ridges of land, upon which the young grass plants have withstood the effects of the drouths, quite as well as those upon the moistest parts of our fields; though not quite as luxuriant. We do not pretend to farm better—manure higher, nor plow deeper than our neighbors, but we have been vastly more successful, the past three years in getting (what is termed) a catch of grass and we can attribute it to no other cause than that of our free use of plaster in our hovels for the several past winters. We have no doubt but guano, pure and unadulterated, is a most valuable manure for the wheat, and some others of our cultivated crops—providing, we except the summer drouths; yet, we believe most of our farmers had better expend money for plaster, to be used daily in their hovels and stables during winter and summer too, if they keep their cows in the barn at night, as every good or bad farmer should, if he consults his interests. Hay, with us, in farming, is of vastly more consequence than the wheat crop.

But if we wish to grow wheat, we had better do it through the aid of plaster and clover than to attempt it, by the use of guano at sixty or more dollars per ton.

Plaster, used as we have used it, carries to the land when mixed with the manure, lime, sulphur, and ammonia, these very essential constituents of plants. Some apparently good soils do not contain these substances in sufficient quantities—neither does common farm-yard manure, for we know this to be true, from the fact that we have time and again, seen the corn crop very much increased in value, (on good looking and well manured soils,) by the simple addition of a tea-spoonful of plaster to the hill, at the time the corn was planted. We went two miles last September, to look at a field of corn, planted on good soil, well manured, all plastered in the hill except occasionally two rows together had no plaster; we judged the plastered would produce one-third more corn. But since the harvest, the experimenter has informed us that the unplastered rows did not produce more than half as much as the same number of rows that received the plaster.

Olive versus Lard Oil.—At a late meeting of the Farmer's Club, connected with the American Institute, Prof. Mapes asserted that what "we received as pure olive oil in the market, is nothing more nor less than the surplus lard sent by our pork merchants to France, where it is transformed into the *genuine article* of sweet oil, and returned to be used at the tables of those very persons who exported it in the solid state." This is certainly refreshing information for the lovers of pure sweet table oil among us, and is no doubt perfectly true. We venture to say that not one-tenth of the oil sold for that of the olive, in our country, is anything else than lard oil.

Any person can convert the common lard oil sold for burning in lamps, into as good sweet oil as that which is generally sold for olive oil, by the following process:—Take say about a quart of the common oil, and place it in a clean tin pan, and set it on a stove; bring it up to about the heat of scalding water, and then add about one-quarter of an ounce of sal soda dissolved in half a tea-cupful of hot water. Stir this into the oil for about five minutes, then take off the vessel, and allow it to cool. When the sediment settles on the bottom of the vessel, the clear should be poured off into a clean bowl through a white cotton cloth, to strain it. The oil obtained by this treatment is sweet and pure, excellent for oiling fine machinery, and for making perfumed oil for the hair.—*Scientific American.*

Horticultural Department.

CONDUCTED BY JOSEPH FROST.

POMOLOGICAL SOCIETY OF WESTERN NEW YORK.

The formation of a Pomological Society in Western New York, to include that portion of the State, westward of Syracuse, has been discussed. The objects of this Society are to ascertain from practical experience, the relative value of varieties of fruits in this part of the State, to find out and bring into notice many valuable seedling sorts, which are now unknown. Also to obtain the peculiar characteristics of each fruit, that they may be classified under different heads, viz.: Those worthy of general cultivation, for profitable orchard culture, and those best adapted for an orchard garden, and others which may not be embraced under such heads, to be discarded as unworthy of further cultivation; in fact, it is to elicit the most reliable information upon all subjects intimately connected with pomology.

We think highly of it, and almost wonder that a Society having this for its object was not formed before. Ohio, Illinois, Iowa, and Michigan, have theirs and much benefit has already been received from them, although in their infancy.

The reputation of Western New York for its fertility of soil, its extensive orchards of the finest fruit, extends throughout the Union. It is admitted that no section grows the various kinds of fruits with such success as here. No section presents such a fruitful field from which valuable information may be derived as this, and it it believed that there are enough practical and energetic men to effect it.

The preliminaries are yet to be arranged, but if it is conducted with liberality, and with an earnest regard and attention to the desired object by its most active members, it must succeed. Then the reputation of Western New York for its superior fruits, will be maintained, and much desired information that will be of the greatest value to those interested in the cultivation of fruit will be obtained.

HINTS ON GRAFTING.

Much is written in every horticultural journal upon grafting, and each treatise of fruits gives all the information desired, numerously illustrated with cuts. Yet a lamentable ignorance exists among farmers and many fruit culturists upon the subject.

It is not our intention to give the *mode* of the operation, but to say when it should be performed, and the stocks applicable to each kind. Any work on horticulture may inform sufficiently a novice who possesses an average amount of skill and care, so that he may be able to graft successfully.

The first step to be taken is to obtain scions of those varieties which are desired; they can be cut from bearing trees, or from young plants, if genuine, between which there can be no choice, only that the shoots should be *well ripened*. They may be cut during March or April, or at any time the buds commence to swell, indicating the approach of spring. They may be kept till wanted in a moist cellar, partly imbedded in sand.

There are only two forms practiced in ordinary grafting, viz.: Stock grafting, and whip or tongue grafting. The former is adopted for large trees, where the stock is more than three-fourths of an inch in diameter. The latter is applicable only to seedling stocks, and small trees. The stock and scion ought to be about the same size, that the cut may unite on both sides; but it is nearly as well if the point of union be only on one side, when a stock, two or even three times the diameter of the scion, may be worked in this manner.

The season for grafting is during March and April, and in some localities it may be deferred till May. As a general rule, however, it should be done as the buds begin to swell, and several days before they will expand. The cherry is one of the first trees that shows the approach of spring, and therefore should be grafted first—then plums, pears and apples.

When scions are kept fresh and in good condition we have had considerable success resulting from grafting trees when in leaf or in bloom. This may be accomplished sometimes with such easy growing sorts as apples and pears, and often with plums, but with cherries never. The composition for grafting is about equal parts of beeswax and tallow, and double the quantity of rosin, into which, when melted, dip narrow strips of cotton cloth or calico.

As a general rule scions should be grafted upon their own kind, as apples upon apples, pears upon pears, except when some specific object is wished to be obtained. All experiments in grafting the pear upon apple trees, on the mountain ash, on the orange quince which grows so freely in our gardens, will fail, giving the cultivator no reward for his pains. The apricot upon the plum stock is an exception, which however, can not be successfully grafted, unless a piece of old wood, say three-fourths of an inch, is attached to the scion.

NOTES ON THE WEATHER, ETC.

The past year closing with the present month, has been a most peculiar and marked one throughout the Western, Middle, and New England States, and will be most distinctly remembered for many years.

The drouth during last summer was undoubtedly the most serious that America ever witnessed. Wisconsin and the larger part of Michigan and Canada, alone escaped. The actual bona fide loss to farmers, from the drouth of 1854, is more than two hundred millions of dollars. It is a fact that upon all subsoiled or very deeply plowed lands, the crops suffered least, and particularly upon grounds which were underdrained.

We had as little rain perhaps as in most localities, but our grounds were well drained, subsoiled deeply, and its surface was constantly stirred with the hoe, plow and cultivator; therefore our trees and plants grew with equal vigor and made as healthy a growth as in more favorable seasons.

From two to three feet in depth of water, falls in rain and snow all over the surface of the earth, in the course of a year. It having been so dry during the summer and autumn, it might justly be supposed that a great body of snow must fall through the winter. In December the snow fell to the depth of two and three feet all over the country, which soon melted. January and February gave us a wonderful snow storm which extended from one part of the country to the other, being in many places several feet deep on a level. In Illinois, where a storm of snow is seldom seen, it was so terrific, and continued so long that the mails from Chicago for St. Louis, and Springfield, were detained two weeks, as well as travelers. The accumulation of mail matter at that point alone exceeded one hundred tons. Cars containing hundreds of passengers were blocked by immense drifts, and the inmates were starved for many days, and nearly frozen to death by the intense cold. The unusual severity of the weather extended at this time over the whole country, exhibiting a greater intensity of cold than at any former period.

When the thermometer indicates the mercury at zero with us, we consider the weather remarkably severe; if a few degrees below, there is great danger of the blossom buds of the peach trees being wholly destroyed, thus losing our entire peach crop.

To-day we have examined buds of the peach tree which were fully exposed to the changes of the weather, and we feel confident that they are not injured, although the mercury fell on the 6th of Feb., at 7 o'clock in the morning, to 18 degrees below zero, and at the same time on the 7th, 22 degrees below, and so continued through the day with but little moderation. We think that apple, pear, cherry trees, etc., too, have not suffered.

The escape of the fruit trees, is attributed to the want of sun throughout this extreme cold, which was wholly obscured by clouds for nearly three weeks. All trees were in better condition, too, to withstand any sudden or extreme changes of the climate, than usual. The exceedingly dry weather had matured most perfectly the wood of last season's growth, thus rendering them unusually hardy.

The seeds sown last fall, as well as plants, will not be injured, as a great body of snow covered the ground, which effectually protected them from the severe cold.

SHADE TREES.

In the March number of the Farmer for 1854, we gave a brief notice of the failure of transplanted trees consisting of hard and soft maples, and white oaks. In the spring of 1854, soon as the frost was out of the ground, the dead trees were all taken up; broad and moderately deep holes were dug, the subsoil removed, and a fine compost of virgin mold and well rotted manure applied to each tree.

Three feet distant from the line of the tree, a ditch was dug, which gave thorough drainage, and conducted all the surface water away from the trees. Hard and soft maples were then set out, and firmly braced, that the wind might not loosen the roots, and leave air spaces about them. All commenced an immediate growth, and continued to grow finely throughout the season, the drouth not even causing their leaves to drop. A runaway horse overthrew one of them about the middle of June; it was immediately replaced, but to no effect; with that single exception all have done well, and promise ere long to be an ornament and source of pleasure to the eye.

It is as easy to transplant trees, and have them make a continuous and healthy growth—extraordinaries excepted—as to half do the work, and be obliged to repeat the same two or three times.

Mr. Barry, of the *Horticulturist*, very truly observes, that it would be a great benefit to community in general, and particularly to those who have planted, or are about to plant fruit and forest trees, if repeated lectures were given by a lecturer whose especial duty it should be, to ring the changes upon, and show the folly of attempting to hurry the work of which we are speaking. Even after the trees are

planted, it may be with care, a majority fold their arms, and say by their actions, "Now let us wait for the fruit," &c. No greater folly than this can be done. What would be thought of him who having invested his means in a manufactory, should then shut down the gate, and let the machinery lie still and rust for want of use, and yet the comparison holds true; what is a tree or plant but a machine from an Almighty hand, endowed with power to select from the earth, or absorb from the restless winds, the materials for its own support and growth?

CULTIVATION OF FLOWERS.

What flowers pay best? is a question often asked by the devotees of Flora. Enjoyment and outlay both considered, I for one will answer, annuals. You reap all the benefit from them the first year; they are convenient for those who have not a permanent residence (as they ought not to be planted in the open ground before the 10th or 15th of May); the ground is clear of roots, ready to be worked and manured deeply; changes of form can be purchased to stock a yard for what a few respectable shrubs would cost. They present every variety of height and color. Some are dwarf, suitable for edgings, as Portulacca, sweet Alyssum, Candytuft, Rocket Larkspur, Campanula Loreii, Viscaria, China Pinks, and the dwarf Asters, all of which will bloom until hard frost. Another class for sowing in beds by themselves, as Phlox Drummondii, Petunias, Verbenas, Pansy, Asters, Caccalia, Mignonette, Godetia, Clarkia, Escholtzia, Bartonia, Coreopsis, Hibiscus (trionum), Centranthus (macrisiphon), and Centaurea or Bachelor's Button, and many others, and then there are the climbers that can be trained in all the forms that fancy can suggest, or even to simple strings, such as the large flowered Morning Glory, Sweet Peas, Thunbergia, Mansandia, Canary bird flower, and the scarlet flowering Beans. Besides, there are others of all colors and heights to fill up the odd corners and places, as the purple, white and yellow sweet Sultans, Tinnea, Scabiosa or Mourning Bride, Balsams, Stocks, Globe Amaranths in colors, Snapdragon, Lupins, Lotus (jacobeaus), Crepis (barbarta), Helychrisam, Gilia, High Mignonette, Lavateras, pink and white, Ageratum, Ammobium, Rocket Candytuft, and many others, with some double Sunflowers, Persicarias, and tall Mallow for a background, all of which, except the Balsams, will endure severe frost without injuring their bloom. But some will say, they have to be planted over every year. We admit that, but to me it is a pleasure to plant and watch the growth of new varieties, though many times have I been disappointed when the flowers came, to find when I had ordered one kind, another had been sent in its stead, sometimes finding the flower not worth a place in the darkest corners; but not so with any of these, they will always give satisfaction. I have named near fifty varieties which would cost very little. Even fifteen or twenty varieties well selected will make a good display, and can generally be obtained for $1 per package, or at least for six cents a paper. I conclude by saying to one and all, plant seeds. If you have not room for fifty varieties, plant twenty; if not room for that number, plant ten; children love flowers, and who does not?

An Amateur.

[We are much obliged for the above communication, and should be pleased to have the fair author continue her favors.

The *Florist and Horticultural Journal*, edited by H. C. Hanson, 63 Walnut-street, Philadelphia, commenced with the January number, its fourth volume. It is got up in fine style, having in each number a colored plate of a new plant, or fruit, most of which are executed in Europe. It is a very valuable work, conducted with much ability, and we notice among its contributors many gentlemen who in this country have taken the lead in horticulture. Its price is very low, only $2 per year, in advance.

OSAGE ORANGE HEDGES.

"I have been cultivating the *Osage Orange* as a substitute for rail fence for three years—have sown a quart of seed each spring. The first quart was carefully sown, after soaking a number of days in warm water, from which I obtained nearly 1200 plants, one-third not germinating until the next spring. The second quart similarly treated did not produce 100 plants. On the 30th of last April, I sowed the third quart of seed, which had been soaked in warm water five days, to which I added as much saleratus as I could take up in my thumb and finger, repeating the dose as often as necessary. As soon as sown, the rows of seed were covered with boards, which were not taken off until some of the plants had made their way up to them. I think every seed must have vegetated, as it produced about 8,000 plants. I think 1½ inches about the right depth to sow the seed, and it is essential to have the soil deep, mellow, rich and moist. My plan of planting a hedge has been, to throw up land ten feet wide with the plow, going as deep as possible, strike a furrow in the centre, stretch a line over the centre, put in the plants 14 inches apart, carefully pressing the soil around them, and placing them where wanted. I cultivate a row of potatoes, or some other vegetable which will not shade them on each side the first and second season.

As to their capacity to stand transplanting, I will state that in 28 rods of two-year old plants put out last spring, not a single failure occurred, they were cut off at the surface of the ground when planted. They now stand nearly five feet in height. It is my impression that any clipping the first season retards their growth. Two-year old plants are best for transplanting, they require less attention, and make a fence quicker.—*Benjamin Sears, in Patent office Report*, 1850.

We tried the experiment of clipping the most luxuriant shoots of an Osage Orange Hedge last season, and are satisfied that they must be let alone the first season of growth, though we have seen it stated by some writers that the plants would bear any amount of clipping or pruning.

DISEASED APPLES.

Mr. Editor:—In the July number of the Farmer, is an article copied from the *Maine Farmer*, headed "Singular Disease in an Orchard," that has given me considerable uneasiness, from the fact that so far as I am able to form an opinion from that article, I am fearful that the same disease is among my apple trees and also in some other orchards in this vicinity. In 1849, I came into possession of the farm on which I reside; the following fall most of the fruit on a large apple tree near the centre of the orchard (containing one hundred and twenty-eight trees) was nearly worthless, and has continued so up to this time, being about as badly diseased last fall as usual; there being not more than one-fifth of the fruit on the tree free from the disease. The disease begins to show itself when the fruit is not larger than a nutmeg and continues to spread from one to another, until gathering time, or until the fruit is matured. For some time before the fruit is ripe, all grades of the disease may be seen among them, from a light umber colored, irregularly radiated blotch, not larger than a pin head, up to a dark mahogany colored *scab*, three fourths of an inch in diameter. Some of the oldest scabs have a deep crack across them, caused by the expansion of the fruit, while the skin on the scab remains stationary. Where the disease begins on the side of an apple freely exposed to the sun, an apparently inflammatory process is set up around the place of attack, presenting a handsome pink colored areola around it (as you will observe in No. 3 of the specimens); this redness gradually fades in the centre as the disease advances and widens upon the circumference. Some apples have but one scab on, while others are completely enveloped with them. It seems to be principally confined to the skin, destroying its vitality, and thereby preventing its expansion, while the healthy part of the skin performs its functions properly, thereby causing the diseased part to appear as if depressed. Where the whole surface, or nearly all of it is implicated, the apple falls prematurely. The later in the season the apple is attacked, the less it is injured, and after maturity it ceases to progress. The fruit on this tree has a yellow skin, and as they lay upon the ground, there is a striking resemblance to a tobacco spit upon a light surface. The tree appears to be in good health, and bears as abundantly as any in the orchard. The limbs on it are not crowded, neither is it unusually shaded by foliage; the disease is worse on the under limbs, and in the centre of the tree. There are some grafts of the *Baldwin* in this tree, and the fruit on them suffers in the same manner as the rest. I felt no uneasiness about it until last fall, supposing it would not spread, and was of the opinion that it would leave the tree first attacked before long, considering it a temporary matter; but this last fall nearly all my trees having fruit showed more or less of it among them, and a favorite winter fruit was badly diseased. My trees are principally seedlings, and apparently as healthy as my neighbors'. The orchard still remains in blue grass as I found it.

I have inclosed for your inspection samples of the disease, from which you can perhaps form a better opinion than from a written description of it. All the samples, except 4, 5, 6, were prepared in September to forward to you then. Nos. 4, 5, 6, were cut off of some apples this evening Jan. 5th. No. 1 presents the first stage of the disease. No. 2 a more advanced stage, while No. 6 shows it in its maturity. This may appear to many as a small matter, but it is not so to me, and any information either you or your correspondents can give, that will enable me to remove it, will be thankfully recived. L. J.

Trenton, Illinois, 1855.

[Our correspondent has accurately described the appearances of the various stages of the disease affecting his fruit. We have consulted all of the text books on pomology at our command, but do not find any definite remedy proposed. As an experiment, we would suggest that our correspondent break up the soil underneath part of his trees, and apply lime and leached ashes freely about the roots. As the fruit is most affected on the under limbs, and in the centre of the tree, it would seem that liberal pruning would aid in preventing the spread of the infection. Make a mixture of one part of dry slaked lime with two parts of dry ashes, and put about a bushel of the

compound broadcast under and about each tree, and mix it thoroughly by means of a cultivator or harrow.

If any of our correspondents can suggest an effectual remedy, they will confer a favor, by forwarding for publication.—Ed.]

CULTURE OF APPLES AT THE WEST.

[Continued from the January number.]

Domine.—A good grower, bears early and abundant crops of medium to large size, and often well colored specimens. This must become one of our most valuable market fruits, not always of the first quality, but being an abundant and regular bearer, has strong claims as a market apple; succeeds well on all western soils. In use from December to February.

Butter, (Sweet Bellflower.)—This is a well known and popular apple among our Southern customers, and is the first apple called for by them. It is used extensively in manufacturing apple butter, which is regularly served up on most tables of the Hoosiers; but you New York folks know but little of the pleasures derived over a good dish of apple butter; hence the name. Flat, often oblong, flattened at the base, sometimes flushed on one side with a yellow ground, flesh yellowish, juicy, and slightly sub-acid, a medium grower, is not an apple worthy of general cultivation except for the purposes above specified.

Peck's Pleasant, large, often flattened in large samples, green, becoming yellow at maturity. A first class apple, bears abundantly, but not as early as many varieties, succeeds well in our loose porous soil, subject to the bitter rot when grown on the prairies. Should be in every Western collection.

Newtown Spitzenburg, (ox-eye,) of Ohio and Indiana, an upright good grower with numerous slender side shoots, wood profusely speckled with small light colored grayish dots, a moderate and regular bearer, seldom bearing large crops. This is the fruit grown in Western New York as *Vandevere*. We have seen barrels of them about Lockport under this name.

Jannex.—F. R. Elliot's description: Fruit medium, round, flattened yellow ground, mostly striped and splashed with red, which often has the appearance of a bloom; russet dots and lines; that near the calyx look like the crests of waves; stem long, slender, cavity narrow, deep, regular calyx, small segments erect, basin open regular, not deep; flesh yellow, tender, slightly sweet, rich aroma; core small. December to February.

Golden Sweet, a somewhat rapid, but sprawling grower; a productive and valuable market fruit; in demand for baking; coming in immediately after the *Sweet Bough*, and continuing sometime in use; not as well adapted to the prairies as opening soils, requires a soil well supplied with lime to perfect good specimens.

Talman's Sweet.—Not much cultivated at the West, because not generally known. I have seen it, however, in fine perfection; it is rapidly coming into public favor.

Raule's Janet.—Medium to small (large at the South); round and regular; flat at the base; splashed and striped with pale red, becoming yellow at maturity, with a refreshing juicy and sprightly flavor; always retains its freshness, and keeps well until May and June, in fact almost the only apple in market after April. The tree is an elegant, upright, good grower, more like the *Northern Spy* than any other fruit, but not quite as upright. I may safely say, that this fruit is the most valuable long keeper yet known; it comes out in bloom two weeks later than any other apple, which places it out of the way of late spring frosts, and enables the tree to bear large and regular crops. When most other varieties fail, we have a liberal supply of *Raule's Janet.*

Belmont, (Gate or Waxen,) retains its Eastern reputation, and is truly a very desirable fruit, and should be represented in all Western collections where it can be grown on high opening soil, sometimes insipid when grown on low prairies, especially if deficient in lime; it is all that can be claimed in a rich, sprightly and refreshing fruit; bears very large crops, each alternate year, and universally sought after by all of its numerous acquaintances; it is a stout heavy grower, and rather scrubby in growth, but finally makes a large fine orchard tree; very hardy, not subject to blight.

American Golden Russett, (Sheep-nose, &c.)—Small, roundish, ovate, slightly russeted on a bright yellow surface, often with marks and splashes of red on the exposed side; flesh tender, melting and fine, in keeping until March and April, when it is a very desirable table fruit; a slow grower in the nursery, but a moderate and regular bearer.

Northern Spy.—I am sorry to say, this very popular, and in New York, highly esteemed apple, does not (and there are doubts whether it ever will) maintain the high reputation which it has gained as being the "ne plus ultra" of long keeping, and market fruits; it is all that can be desired as a nursery tree, grows beautifully and sells well, but is very tardy in coming into bearing, and then only about one half the speci-

mens are fair, it being inclined to grow knotty; together with the fact that the apple worm relishes its rich fine flavor, causing the fruit to fall prematurely, and when we do get a good specimen, it ripens and is gone by the first of December. I doubt whether it will ever keep in perfection longer than January in this region. It is due to say, however, that all the samples which have been grown were on laid trees, grafted from five to seven years since. A few more years will determine its value as a Western fruit. One of our neighbors has 500 trees of this variety in one orchard.

Winesap.—Medium, conical, flattened at the base; bright red, clouded, and splashed with very dark red, almost black; flesh yellow, rich, tender, and crisp, juicy, rather vinous than otherwise, with the richness of the *Esopus Spitzenburgh*, but more melting; one of our most popular and valuable table apples; grows sprawling and slender, bears very early, and abundant; succeeds well on all dry soils.

Westfield Seek-no-further.—Medium to large, dark bronze color when taken from the tree, with clouds and stripes of dull red, becoming a bright, rich, yellowish color at maturity; very rich, but rather dry when grown on prairie soil; succeeds best on a loose, porous, north hill side, when it is very fine; a moderate grower; in use from November to January.

Large Yellow Bough.—Medium to large, white, smooth, clear skin, specked with numerous small vermilion and carmine specks, becoming a rich golden yellow at maturity, which is about two weeks later than *Sweet Bough*, with white flesh, tender, juicy, sweet, and fine; keeps well for two and three weeks, ripening gradually; is valuable as a market fruit; was brought to this region from Virginia some twenty years since, and has become generally disseminated; bears regular, and very large crops; tree spreading and open.

Fameuse, (Snow Apple or Pomme de Neige.)—This exquisitely and beautiful desert fruit attains fine perfection in our heavy soils; is much grown in our neighboring county of La Porte, where it attains the greatest perfection; grows fair in the nursery, though not rapid; bears not large, but regular crops of fine samples; better ones I have never seen than have been on exhibition at their county Agricultural Society's meetings, where much attention is given to fruit growing; should be in every collection.

Hubbardston's Nonsuch.—Very large, bright red, and yellow ground, clouded with deep red; one of the most beautiful apples grown, commanding the first price in the market; universally admired and esteemed by all who know the fruit; a very rapid and fine grower; bears large and uniform crops; in good keeping until March, when it is all that can be desired in point of flavor, being rich, aromatic, and fine, retaining its freshness a long time.

Herfordshire Pearmain.—Medium, flattened, dark red with a ground work of russet and yellow; a very rich, yellow fleshed, and very desirable fruit; grows moderate and spreading; regular bearer, and of the first quality. November to January.

Gabriel.—Fruit medium, roundish, conical, striped and splashed with pale red; a good bearer, apt to overbear and fruit become small; the tree is a moderate grower, rather spreading. This fruit is of the first quality, resembling the *Fameuse* in flavor and sprightliness, but a richer fruit; flesh yellowish, juicy, a mild sub-acid flavor. November to December.

Rambo.—This old and well known variety attains the greatest perfection here, and is much admired by all, and especially by those who do not like very tart fruit; it is much grown as a market apple, and always sells; it overbears every alternate year, and becomes small; one of the best growers, forming a large orchard tree; most too upright a habit, and the body is often exposed to the sun, and decays on the south-west side of the tree. November to January.

Limber Twig.—A popular fruit and much grown in Illinois, Indiana, and other Western States; is much admired as a long keeper, being in perfection from April to June, which together with its large fine appearance, make this one of our first class fruits; a hardy tree; fruit large, roundish, sometimes conical, light yellow with stripes of light red, and patches of russet specks; flesh white, tender, sub-acid.

Jersey Sweet.—Medium, roundish, tapering to the eye, yellow, nearly covered with stripes of pale red, fine grained, juicy and sweet. October. This is nearly the only good sweet apple in our market at this season of the year; grows fair, and bears abundant crops; succeeds on most Western soils.

Jonathan.—This resembles very nearly the qualities of the *Winesap*, is a little larger, keeps longer, and is darker colored, often nearly black, but not as good a bearer, nor as juicy and rich as the former; a hardy tree and extensively grown in this region.

Cloth of Gold.—Large, roundish, flattened, bright yellow, with small russet specks, often shaded and striped with pale red on the exposed side; very valuable as a market fruit from its large size and fine appearance, always sells; bears but moderately; is good second class; flesh yellowish white, sub-acid, tender,

juicy, and good; is most esteemed for culinary purposes; is a strong heavy grower.

Esopus Spitzenburgh.—This old and truly popular fruit maintains its old reputation, and is A No. 1 in all collections; it is a better bearer here than in New York, seldom fails of producing a good crop of the most luscious fruits; it does not keep well longer than December to January, but is not keeping as well this season.

Fruits grown West vary so much, and are so different in appearance, that their best friends in many instances do not recognise them. Most fruits grown on our prairie soils are blotched all-over with dark clouds of rust, or fungus, which makes them appear so different from specimens of the same variety grown on the openings, that one would hardly believe them to be the same; these spots are more common in seasons when we have frequent showers, immediately followed by a hot scorching sun, and are supposed by some to be caused by the sun striking the fruit while drops of rain are yet on them. I am not aware that the spots above alluded to affect in any way the quality of the fruit, but it gives a very bad appearance. Some varieties are more affected in this way than others; the early fruits generally escape. Our prospects now are very flattering for a good crop of fruit this year; most of our bearing trees are literally covered with blossom buds. We among others are very anxious to have a fruit season. There are about 100 varieties of pears in our vicinity which will bear this year if favorable, and we have some curiosity to test them by word of mouth.

Yours truly,

South Bend, Indiana. Wm. H. Loomis.

GENESEE VALLEY HORTICULTURAL SOCIETY.

The annual meeting of this Society was held at the Supervisors' Room in the Court House in this city, on Saturday, February 10th. There was a fair attendance of members. The following officers for the current year were elected:

President—Wm. A. Reynolds.
Vice Presidents—H. N. Langworthy, D. C. Greenleaf, N. Haywood, Jno. F. Bush, Jas. Upton, Asa Rowe.
Corresponding Secretary—H. E. Hooker.
Recording Secretary—Jas. Vick, Jr.
Treasurer—Jas. H. Watts.

The following committees were appointed:

On Flowers.—Messrs. C. J. Ryan, J. A. Eastman, R. Donallan, J. Salter, Wm. Webster, C. F. Van Doorn, Jos. Frost.
On Vegetables.—Messrs. Jas. Vick, Jr., J. P. Fogg, H. N. Langworthy, and H. E. Hooker.
On Botany.—Messrs. P. Cooney, F. Trentman.
On Fruits.—J. J. Thomas, H. P. Norton, A. Pinney, P. Barry, Edwd. Frost, L. A. Ward, C. Powers, Geo. Ellwanger, H. E. Hooker, Selah Matthews.
Executive Committee.—President, 1st. Vice President, and the chairman of the several standing committees.

PANSIES IN POTS.

My cold frames are again becoming gay with these delightful spring flowers. Those who have never tried to cultivate the pansy in this way, have little idea what a profusion of really gay flowers is produced by this plant during the whole of the early months; and with proper attention they will blossom in good character till the latter part of May. As regards cultivation, little need be said; for the pansy is not difficult to manage. Plants for early flowering should be potted up from the open ground in October. If the weather is open in the last week in January, or the first week in February, begin to re-pot generally, using soil consisting of good decomposed turfy loam, rotten manure, a little leaf-mould, and coarse sand, the latter in proportion to the nature of the loam. The soil should not be pressed hard with the hand; no water should be given for a day or two after potting. Before, as well as after this operation, the plants must be kept well up to the glass. They should have from two to six shoots, or strong leaders; and to keep them to these chosen shoots, a number of small ones must from time to time be removed. These cuttings answer the double purpose of strengthening the main shoots, and producing a stock of young plants which will supply the place of the old ones when worn out. Keep the frames in which they are placed open whenever the weather is favorable, pulling the lights back or tilting them up; maintain the plants in a growing state by watering them as often as they require it, going over them for this purpose every day. Plants that have several shoots should be tied into shape, placing the centre-branch upright in the middle, and the remainder at equal distances all round; but the plant must be shaped according to the number of shoots: three leading branches are sufficient if cut blooms only are required. Another advantage is, that the same plants, from the succession of bloom they produce, will answer the double purpose of exhibiting in pots or stands of cut flowers. After the potting, as above recommended, has taken place, take the earliest opportunity at which the ground is in a fit state, to plant out any stock not required to bloom under glass, or plants that have been wintered in stores, &c., which will bloom through May or June, and produce a stock of good healthy cuttings. By following the simple and inexpensive treatment just recommended, I am sure that those who take the little trouble that it entails will not fail to be gratified by a fine display of bloom, which, from its long continuance, will most certainly afford much gratification.—*T., in Gardeners' Chron.*

The horticulturists of Paris have succeeded by artificial crossings in obtaining a natural rose of blue color, which is the fourth color obtained by artificial means.

PEACH WORM.

In many of the papers at this season may be found remedies for the peach worm. They may be called standard remedies, because they appear periodically year after year. There is no harm in trying them, but the only remedy we believe in, and have found effectual, as well as simple, is to examine each tree, spring and fall, with a knife tapering to a sharp point, hunt up the intruder and destroy him. If he is about at all, there is no difficulty in finding him immediately under the surface of the ground, his presence being indicated by the gum.

Just below the surface the bark is tender, which makes it the point of attack. In the hard bark above the ground he cannot make an entrance, and to guard against him below, we have pursued the plan each fall of exposing the trunk by drawing away the earth around it down to where the large roots begin to branch out, and leaving it exposed all winter. The bark thus becomes hard and impenetrable.

In the spring it should be filled up again a little above the level, a peck of leached ashes being applied also around each tree, according to size. This application greatly promotes the thrift and growth of the peach.

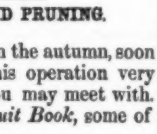
By attending to these recommendations, instead of being a short lived tree, having but two or three crops, and then dying off, as is the case with many orchards, we believe it can be made to live and be productive and profitable from ten to fifteen years at least, and perhaps longer. We know of peach trees in this vicinity, apparently perfectly healthy and bearing well, twenty-five years old. To those who consider this plan too troublesome, we only say do without peaches and make no complaints.

Fruit of the best quality cannot be grown without care and trouble, and if it could, would not be valued so much as it is. The yellows in the peach is far more difficult to manage, and indeed no remedy has yet been found. Whenever it makes its appearance, the tree should be exterminated, root and branch.—*Penn. Farm Jour.*

GRAPE VINES—BEARING AND PRUNING.

The proper time for pruning is in the autumn, soon after the fall of the leaf, and in this operation very much depends, as to the success you may meet with. We give herewith, from *Cole's Fruit Book*, some of the different forms of training.

The Cane, or Renewal System.—The first season one branch is trained up; in the fall this is cut back to 3 or 4 eyes, and the next season another is trained up, and the first is extended; both are then laid down and trained horizontally, near the surface; and from each a cane is trained up, (*a. a.*) The next season these will bear fruit, and two more canes, (*b, b,*) trained up to bear fruit the next season, when *a, a* are cut out near the horizontal branch, leaving one eye, and new shoots trained, and so on. Dr. W. C. Chandler, of South Natick, Mass., trains in this way, and he has sent us fine *Isabellas* an inch in diameter. Some train up the main vine perpendicularly on a building, to a convenient place, and then extend canes horizontally, and renew as above. The cane system gives excellent fruit, as it is always on new wood; but the yield is generally larger by spur or fan training. The canes should be as much as two feet apart. If the vine is strong, the horizontal branches may be extended, so as to have 8 or 10 canes.



THE CANE SYSTEM.

The Spur System is the training up of the main stem, and of spurs horizontally, cutting back the spurs, annually, to 2, 3, or 4 eyes of the new wood, according to the strength of the vine, and number of the spurs.

THE SPUR SYSTEM.

When the spurs have extended too far, cut out a part, yearly, training up new ones, thus changing all the wood to new; and as the vines become old and unproductive, cut down part at a time, and train up new ones. This will combine the cane and spur method, and is an excellent system.

The Fan or Tree System, or other convenient modes, are practiced in vineyards, and in common garden culture, or in training grapes in yards, by walls, trees, buildings, &c. In gardens or vineyards, a trellis may be formed by setting posts, or stakes, 6 or 8 feet high, and nailing on narrow strips of boards, or stakes alone are sufficient, if set 15 or 20 inches apart. In vineyards, where the vines are about 3 or 4 feet apart, sometimes only one stake is set to a vine, and the lateral or oblique branches are trained to the neighboring stakes.

Pruning of grapes is not generally well understood. Some do not prune at all the proper season; they have a mass of vines and only a little fruit, and that poor. Another absurdity, which is often added to the above, is cutting off the young shoots in summer, just above the fruit, and sometimes still worse, picking off the leaves to expose the fruit to the sun.

The sap ascends to the leaves, and there mingles with matter, absorbed by the foliage, then it is digested, or elaborated into food, which descends to nourish the plant. So essential are the leaves, that the blight on the foliage destroys the fruit, and a frequent repetition is death to the plant. The leaves,

not the fruit, should be exposed to the sun. We urge this point, as thousands mistake, and grapes are generally mismanaged.

As pruning the vine young prevents the growth of the roots, but little should be done for a year or two after it is set. In Nov., or early in Dec., all vines in open culture should be pruned liberally. If pruned in spring, before leaved out, they will bleed; they may bleed in spring if pruned in winter. In pruning rather tender vines, leave more wood than is needed, as some may be killed, and finish pruning in spring as soon as the leaves are nearly developed, when the life of the vine may be seen. In summer allow a good growth beyond the fruit, and about midsummer, pinch off the ends of the branches, to check them, and cut out feeble laterals, and branches on which there is no fruit; then there will be much foliage to absorb the matter, and prepare nutriment; and by checking the growth of wood, it will be appropriated to perfect the fruit. The two great errors are in neglecting to cut off useless wood in fall, and in depriving the plant of useful foliage by close pruning in summer.

LIQUID MANURE FOR THE GARDEN.

Permit me to offer a few remarks on the valuable effects that night-soil, when reduced to a liquid state, has upon the various productions of the garden; and, as not a few of your readers will be aware, manures are of no use to vegetation until they are dissolved in water. When, therefore, liquid manure is used, the cultivator has less trouble, and at the same time he is applying a substance in the state in which plants can best receive it and derive most good from it.

For some years past I have been in the habit of using this description of manure to a considerable extent, and have found the results to be very beneficial; besides it prevents the necessity of applying for such quantities of manure in a solid state. At the end of the season I make it a rule when turning up vacant pieces of ground to the action of frost, to lay upon the exposed soil some rotten manure, adding a considerable portion of vegetable refuse reduced to mould for such purposes. This mould is obtained by taking all the refuse possible from the garden, throwing it into a heap to rot, and turning it two or three times during the summer. The decomposed vegetable matter is admirably adapted for the growth of plants for culinary purposes.

During the winter I go over the ground intended for the Brassica family, pouring on a large quantity of this liquid, in order to allow the winter rains an opportunity of washing it down, so that the ground is greatly benefited.

The above is also applicable to gooseberry and currant bushes. I have a large basin made round the root of each, and about the end of November I apply two large pans full of the liquid to each plant; afterward I level in the earth that had been previously taken out for the purpose of forming the basin.

About the end of January, after the bushes have undergone their winter pruning, they again receive a similar supply before commencing to put the ground in neat order for the season. Raspberries and strawberries are also greatly benefited by the use of this liquid. In applying it to raspberries the method recommended for gooseberries is suitable, and where it is applied to strawberries it increases the crop twofold. Mr. Rivers strongly recommends it for roses. He says: "I have found night-soil mixed with the drainings of the dunghill, or even with common ditch or pond-water, so as to make a thick liquid, the best possible manure for roses, poured on the surface of the soil twice in winter, from one to two gallons at each time. December and January are the best months; the soil need not be stirred till spring, and then merely loosened two or three inches deep with the prongs of a fork, for poor soils, and on lawns, previously removing the turf. This method I have adopted for several years, and found it most efficacious."

When night-soil is not to be got, I take as next best cow-dug made into a thick liquid of the consistency of porter, and apply it in larger quantities than when night-soil is employed.—*John Fleming, in Agriculturist.*

THE AURICULA.

About the middle of March, if the weather is fine, the trusses will be getting sufficiently forward to select those intended for exhibition. Seven pips are the lowest number allowed by our Metropolitan Societies; therefore select the most promising, containing that number and upwards. Those with round buds, as nearly of a size as possible, the truss also round and compact, should be particularly selected, and if there are any monster pips among them with large oblong tubes or other deformities, remove them while young. At this stage of their growth, care must be taken in watering that none be allowed to fall into the tubes or pipe, if it happen to be exposed, as is the case with some varieties; for although the buds be so young, the meal of the eye may be formed, and if so the water will run the meal over the ground-color, and when the blossom is expanded it will be found dull and unfit for exhibition. The mealy-grass varieties require a little extra attention, for their beauty is much increased by preserving the white powder on their foliage. To obtain this object without drawing the plants more than possible, I nail a strip of wood on each side the centre bar of the frame, of sufficient width to shelter them from rain, and place the plants beneath it. By this means they enjoy a free circulation of air and light till in a proper state of forwardness to remove under the hand-glasses, or on the stage.—*L., in Gardners' Chron.*

Early Tomatoes.—Tomato plants, for early fruiting, may be raised very early by sowing a few seeds in a large flower pot, or small box, in good rich soil. Cover the seeds about half an inch, and keep the earth moist; they may be placed near a stove to keep the earth warm. After the plants are up the box may be set in the window, or in pleasant weather in the open air. Give them plenty of water and air; keep them from frost; by the first of May they will be large enough to transplant into the garden. The plants should be thinned out to prevent them from growing too slender.—*Exchange.*

Ladies' Department.

ORIGINAL RECIPES.

Mr. Editor:—The recipe for Currant Jelly in your January Farmer, has an air of truth about it not always found in newspaper articles of that description, and next summer I intend to experiment upon it. Below are two or three recipes that I think valuable:

To Preserve Quinces.—Seven pounds of quinces, 8 lbs. of white sugar and 1 quart of apple juice. The apples sub-acid, pared and cored, and boiled in sufficient water to cover, and afterwards drained through a coarse cloth or hair seive. In the apple juice, sugar and water to dissolve it, cook the quinces until tender. Allow the syrup to boil a few minutes longer and pour over. The apple juice greatly improves the flavor and appearance of the sweetmeat.

Whiskey Plums.—The fruit is best gathered when ripe, but not soft. Place it in a barrel or jar, and fill till the fruit is covered with proof whiskey. In two or three days as it settles there will be room for more. The day before you wish to cook them, soak in cold water to banish the flavor of the spirits. Boil with water, and sugar enough to be pleasant, one hour. Plums preserved in this way are better than dried, or rich jams, and less expensive and troublesome.

Grape Wine.—Eleven gallons of juice, 44 lbs. of sugar, and water to fill a cask of 19 gallons.

Mock Duck.—Take beefsteak, pound it, make stuffing as for duck, spread on the steak, roll it, sew it together, or skewer it fast, rub some of the stuffing over. Bake 1½ hours. L. G. L.

Alum Whey.—Take of alum, two drachms; cow's milk, one point. Boil them together, until the curd be formed; then strain off the liquor, and add spirit of nutmeg, two ounces; syrup of cloves, one ounce.

To take Fresh Paint out of a Coat.—Take immediately a piece of cloth, and rub the wrong side of it on the paint spot. If no other cloth is at hand, part of the inside of the coat-skirt will do. This simple application will generally remove the paint when quite fresh. Otherwise, rub some ether on the spot with your finger.

Lemon Syrup, for a Cough.—To a pint and a half of water, add two large poppy-heads, and two large lemons. Boil them till they are soft, press the lemons into the water, strain the liquor, and add half a drachm of saffron, and half a pound of brown sugar-candy, pounded. Boil all together till the sugar-candy is dissolved; stir the whole till you perceive it will jelly; strain it a second time, and take the seeds from the poppies.

"THE OLD WOMAN."

It was thus, a few days since, we heard a stripling of sixteen designate the mother who bore him. By coarse husbands we have heard wives so called occasionally, though in the latter case the phrase is more often used endearingly. At all times, as commonly spoken, it jars upon the ear and shocks the sense. An "old woman" should be an object of reverence above and beyond almost all other phases of humanity. Her very age should be her surest passport to courteous consideration. The aged mother of a grown-up family needs no certificate other of worth. She is a monument of excellence, approved and warranted. She has fought faithfully "the good fight," and come off conqueror. Upon her venerable face she bears the marks of the conflict in all its furrowed lines. The most grievous of the ills of life have been hers; trials untold and unknown only to her God and herself, she has borne incessantly; and now, in her old age—her duty done! patiently awaiting her appointed time—she stands more truly beautiful than ever in youth! more honorable and deserving than he who has slain his thousands, or stood triumphant upon the proudest field of victory.

Young man, speak kindly to your mother, and even courteously—tenderly of her. But a little time and ye shall see her no more forever. Her eye is dim, her form is bent, and her shadow falls graveward. Others may love you when she has passed away—kind-hearted sisters, perhaps, or she whom of all the world you choose for a partner—she may love you warmly, passionately; children may love you fondly, but never again, never, while time is yours, shall the love of woman be to you as that of your old, trembling, mother has been.

In agony she bore you! through puling, helpless infancy, her throbbing breast was your safe protection and support; in wayward, touchy boyhood she bore patiently with your thoughtless rudeness, and nursed you safe through a legion of ills and maladies. Her hand it was that bathed your burning brow or moistened the parched lip; her eye that lighted up the darkness of wasting, nightly vigils, watching always in your fitful sleep, sleepless by your side, as none but her could watch. Oh, speak not her name lightly, for you *cannot live* so many years as would suffice to thank her fully. Through reckless and impatient youth she is your counsellor and solace. Up to bright manhood she guides your improvident step, nor even there forsakes, or forgets. Speak gently, then, and reverently of your mother; and when you too shall be old, it shall in some degree lighten the remorse which shall be yours for other sins—to know that never wantonly have you outraged the respect due to the "old woman."—*Harrisburg Telegraph.*

Minute Pudding.—Put a pint and a half of milk on the fire, mix five large spoonsful of flour with half a pint of milk, a little salt and nutmeg. When the milk boils, stir in the mixed flour and milk. Let the whole boil for one minute, stirring it constantly. Take it from the fire, let it sit till lukewarm, then add three beaten eggs. Let it bake on the fire, and stir it constantly until it thickens. Take it from the fire as soon as it boils. To be eaten with nice sauce.

Editor's Table.

WHAT SHALL I STUDY?— What is necessary for you to know when you become a man, was the reply given by an Athenian philosopher to a query like the foregoing.

Tried by this standard, many things now taught in our schools, are of but little value when estimated by their ultimate utility.

We have known pupils to spend years in the study of the higher *so-called* arithmetical treaties, in order that they might become the most expert reckoners and arithmeticians of their class and school; and yet when the parents of those lads have been advised of a different course of study, the reply has often times been, "if my boy knows how to read, write, and cipher, he will get along well enough in the world." So he may, but will he get along as well as if more varied knowledge of things and men had been acquired?

Half a century since and the circle of the sciences, so to speak, was comparatively limited and circumscribed. A four years' course would then suffice to give a general knowledge of things then known. But how different is the case now. Take any one department of science you please, and a life time is not more than sufficient to acquire a knowledge of it. How important then, that the time which one can devote to the study of those things which it is expected he will know in after like, be devoted to those things which they must know sooner or later, if known at all.

We compassionate those who come from foreign lands, ignorant it may be of the right and duties they owe to their fellow men; but how many thousands and tens of thousands of youth, now attending our public schools, will go forth into the world equally ignorant of their rights and duties as citizens, and also ignorant of the principles principles of the sciences applicable to every day life? True, they can read; but knowledge is a means, not an end, and he has the best education who can most successfully reduce his knowledge to practice. Viewed in this light, we would suggest that much more attention be paid to Natural Philosophy, Chemistry, Geology, Botany and Drawing, by our young men, and misses too, than is the case at present. Elementary text books on all of these subjects can now be had in every part of the country, and it requires but the will to find the way to a knowledge of them all.

Regarding agriculture as a profession and a science, and viewing it in its various relations to other sciences, it will be seen that no one art or science requires the union of so many things, both theoretical and practical, as the work first given man by his Maker, viz: to cultivate and till the soil. It is a striking manifestation of His wisdom that the means of one's livelihood may be obtained by tilling the soil, with but very little knowledge of the principles upon which the process of cultivation is based, but a more striking illustration of His wisdom in creating the mind of man, when he turns a barren field into a fruitful garden, and causes grass and grain to grow where sterility and barrenness reigned before.

Geology unfolds to him the structure of the earth; and as soils are usually derived from decomposed rocks, an acquaintance with the nature and chemical composition of those rocks cannot but prove of great utility in pointing out the best method of cultivation. Fertile soils contain a mixture of different earths in variable proportion; but as nature has bestowed all the elements on but comparatively few, it is the duty of the scientific agriculturist to supply the deficient element or elements. Unite Botany with Geology, and knowing the natural growth of plants and trees on any given soil, they will inform him as to what earths and elements compose the soil. A geological map of a country points out by a glance of the eye the characteristic strata and features of that country; and as he wishes to grow grains or stock, or any other article, will he select his locality.

But the cultivator sees myriads upon myriads of insects, of every shape and description, covering his plants, and living upon their foliage, and deriving their own support from the then body of the plants, blighting his hopes of harvest. Entomology will teach him their habits, locality, and means of preventing their ravages.

Meteorology will instruct him as to the influences exerted by atmospheric agents. As yet, though many facts are recorded, a general summary of them in accordance with a clear and satisfactory theory is a desideratum. For instance, the different parts of the surface of our globe are unequally exposed to the influence of the solar rays, and the intensity of this action depends on the latitude of the place, and changes which take place during the day and night, &c.

The heat existing from day to day in that portion of the atmosphere next the earth, is not the simple product of the direct action of the rays of the sun on that portion; were it so, then mountain tops should be warmer than the valleys at their base, but we know the contrary to be the fact. We might mention other points in connection with the foregoing, but the above is sufficient to show that we need more certain knowledge of this science.

Most important of all the sciences, a knowledge of which is necessary at the present time, is Chemistry. By its connection with Botany and Geology, he is informed as to the composition of plants, and soils, how the fertility of his fields can be preserved or increased, and how wondrous a connection exists between the lives of plants and animals, &c. But not to enlarge, we close this article by quoting the remarks in reference to Drawing, which we find in the *Horticulturist:*

"On all these accounts, therefore, and regarding architecture as of great importance, not merely in an economical point of view, but as calculated to exercise a great influence on the aspect of the country, and on the taste and habits of the people, we desire to see it studied and taught in our common schools and academies. Drawing is wofully neglected in the course of ordinary education, and yet is one of the most useful and delightful acquirements;— useful in all pursuits that men engage in; and delightful, as affording in all places an opportunity to take accurate notes of objects which we wish to preserve in our memory. If people generally possessed some knowledge of drawing, they would be vastly more competent to examine and understand architectural plans and designs, and they would also be more competent to design and superintend the erection of their own buildings. There is scarcely an

hour in the day in which persons engaged in rural or mechanical pursuits do not feel the necessity of being able to sketch with the pencil. But what proportion can do it? Not one in ten thousand!

"Let us urge upon parents the propriety, yea, the necessity of looking to the matter. Let us also urge it on the attention of trustees and directors of schools, and school teachers too. We would particularly invite the attention of directors of the agricultural schools which are now about being founded in various parts of the country. We look to them with the greatest hope. The study of drawing, both geometrical and perspective, in connexion with the study of the rudiments of architecture, must by all means be included in their course."

We have received quite a number of communications respecting Italian rye grass—its cost per bushel—quantity required per acre for seed, &c. Messrs. Rapalje & Co., of this city, will supply the seed at $3 per bushel, weighing from 14 to 18 lbs. About a peck of seed is required per acre. We give below the opinion of a correspondent in Illinois, who esteems the grass as a desirable acquisitions to our forage plants, if experience shall prove it to be adapted to our soil and climate:

"I am rejoiced to see that the Italian rye grass is being introduced into this country. Having seen much of it grown in my younger days in England, I can easily credit its vast superiority to the grasses in use here, but I should have doubts respecting its capability of resisting the effects of our severe dry frosts in this region unprotected by snow. I had a small parcel of seed sent out from England some years ago, which I sowed in my garden, but the winter being particularly severe, not a root escaped. It however was sown late, and though it made good growth, had probably not matured sufficiently, or got good root hold. It would increase greatly the value and usefulness of your paper, as well as of others, could the prices of new seeds, plants, fowls, &c., and the places where they may be procured, be appended to the notices of them. Please excuse the suggestion, the importance of which has been often felt by those living far away in the West, where new varieties of grains, grasses, and other plants, do not come except through the efforts of some individual more wealthy, and more energetic than his neighbors."

New Engine.—A New Rotary Steam Engine has been invented by Mr. Charles Rumley, of this city, the successful operation of which we have noticed with much interest and pleasure, for a few months past.

The first engine constructed by Mr. Rumley, one of eight horse power, has been in constant operation for eleven months, and though the first ever constructed of the kind, has worked admirably, and been subjected to the scrutiny of thousands, most, or all of whom, have pronounced it an extraordinary machine.

Another of thirty horse power, has been in operation at the foundry and machine shop of Messrs. Carpenter & Dutton, where its capacity has been fully tested. At times it has performed the work of a common fifty horse engine. Still another has been placed in one of our city printing offices, and drives several large presses to the entire satisfaction of both builder and purchaser.

We have thus noticed some of the peculiarities of this engine, and are convinced that as an engine adapted to farming purposes it is without a rival. The only fastenings by which the first engine is attached, are four large wood screws, sunk into the floor. There is no jar in its operation, the motion being perfectly smooth, continuous and uniform, by reason of the peculiar construction of the steam valve, which render the whole machinery obedient to the governor, which surmounts the engine like the spire of a church, and detects the slightest variation in its motion.

The motive power, we learn, probably will be afforded at about seventy-five per cent. of the cost of ordinary reciprocating engines.

Experiments made by the Hon. John Brooks, of Princeton (Mass.), show the following results:

That one pound of Indian meal is nearly equal to four pounds of good hay. That two pounds of oat straw is not equal to one pound of hay. That hay, straw, and meal are improved by wetting them. That cut hay is better than uncut. That three pounds of Indian meal are equal to twelve pounds of English hay, or fifty pounds of flat turnips for milk. That thirty-three pounds of carrots are not quite equal for milk, to fifty pounds of flat turnips, or fifty-three pounds of meal. On consuming 869 lbs. of hay, the manure dropped weighed 2,122 lbs., giving 244 lbs. of manure to a pound of hay. The manure weighed 50 lbs. per cubic foot.

Our readers will notice an advertisement of Messrs. McGrew, Leas & Co., respecting the use of Osage Orange as a hedge. We learn that they have a contract for making 200 miles of fence on the line of the Illinois Central Rail Road, and that they are prepared to furnish plants in any quantity that may be ordered.

A cut illustrative of an Osage Orange hedge, planted by the above named, is necessarily deferred to our next issue.

We have a remittance from Cowan's Station. Our P. O. Directory does not tell us where it is.

Notices of New Books, Periodicals, &c.

Transactions of the Worcester, (Mass.) Agricultural Society for the year, 1854.

We are under obligations to the accomplished Secretary for the above, which contains much practical information, and many interesting facts relative to agricultural science.

Blackwood's Magazine for January, 1855. New York: Reprinted by Leonard Scott & Co. For sale by D. M. Dewey, Rochester.

This Magazine is on our table, and as usual, contains a variety of interesting and instructive articles. The story of the campaign gives a clear and reliable account of the operations in the Crimea. While the article reviewing Lavergne's Rural Economy of England, Scotland and Ireland, gives much valuable information respecting the soil, climate and productions of Great Britain and Ireland.

The Female Emigrant's Guide, and Hints on Canadian Housekeeping, by Mrs. C. P. Traill, Authoress of Backwoods of Canada, &c. &c.—In four monthly parts; parts 1 and 2. Maclear & Co., Publishers, Toronto, C. W.

To those acquainted with the writings of Mrs. Traill, commendation of ours would be unnecessary. An earnest

desire for usefulness is visible in every line of her writings. The introductory portions are replete with interest and good counsel, and the main body of the work will be a reliable guide to the *gude* housewife.

CORNELL'S PRIMARY GEOGRAPHY, forming part first of a systematic series of School Geographies, by S. S. CORNELL. Publishers, D. APPLETON & Co., New York.

We have been favored by the publishers with a copy of the above, and from a brief inspection, we are much pleased with its typography. As an elementary work it is simple, concise, and to the point.

THE WESTMINSTER REVIEW FOR JANUARY, 1855. Reprinted by LEONARD SCOTT & Co., New York. For Sale by D. M. DEWEY, Rochester.

This work contains several articles of great interest on the present condition and prospects of several of the European States, viz: The Anglo French Alliance—Prussia, and Prussian Policy—Poland, her History and Prospects—Austria in the Principalities. The present is a favorable time to subscribe, as will be seen from from Prospectus of L. SCOTT & Co., in our present issue.

Inquiries and Answers.

J. PLATO'S inquiry will be answered in our next.

S. H., of Elk Dale, Pa., inquires respecting the kind of grass grown by B. V. IVERSON, of Columbus, Ga. It is not adapted to the Middle or Northern States. In the *Soil of the South* we see it stated, that the grass in question is a native of Texas, and is there called the Texas oat. now known as the rescue grass.

SOME plan for saving and applying urine, adapted to small farms with limited means, without rebuilding a great deal, would be very acceptable to some of your subscribers in this vicinity. There is a plan up, for collecting it by tubs or troughs, placed under the stables; but how to preserve and apply it, rather troubles us. J. B.—*Virgil.*

Our correspondent will observe in another column, the method adopted by Mr. LEVI BARTLETT, of New Hampshire, which contains many useful hints. We have seen no plan recommended, which answers every requisite. Each one must experiment carefully, in applying theory to practice.

COULD you inform me whether currier's shavings with some mixture of hemlock bark, &c., that has lain from 15 to 20 years, would be as good for litter as swamp muck, or whether the animal matter is destroyed for manure by the process of tanning? I will look for an answer in the next number. J. F. P.—*Havana, N. Y.*

If your currier's shavings have become well decomposed, they are suitable for the purpose proposed. If there is much bark mixed with them, without being well rotted, you can make a compost with alternate layers of lime and bark, and in a year's time it will become an excellent manure for fruit trees. Swamp muck is a good application to the roots of fruit trees, and if allowed to become well dried, is a good absorbent of the liquid portions of stable manure. To realize the greatest benefit from its use, your manure heap should be protected by a roof from the weather.

HORTICULTURAL.

PLUM, CHERRY, AND PEAR SEED. (A Subscriber.) When you have any of the above seed on hand, advise through the GENESEE FARMER, and you will soon have a purchaser.

OSAGE ORANGE. (J. H., Downington, Pa.) We should prefer the Osage Orange to any plant for a hedge. The young plants should be transplanted from the seed bed, and not sow the seed where you intend the fence. For manner of planting, cultivation, etc., see page 90 in March number of GENESEE FARMER, of last year.

PLEASE tell us if any of your nurserymen, or orchardists, have any remedy for the bark louse, short of burning the tree? J. W. B.—*W. O. Springs, Wisconsin.*

We presume the insect referred to by our correspondent is the apple tree bark louse, described by Prof. HARRIS, in his treatise on insects, &c. The following remedy is given in that work: "A wash made of two parts of soft soap, and eight parts of water, with which is to be mixed lime enough to bring it to the consistency of thick whitewash." Apply with a brush early in June.

Other washes have been recommended, viz: Two pounds of potash in seven gallons of water; and another of a quart of common salt dissolved in two gallons of water.

The first recipe given, we know to be effectual. KOLLAR in his work on '*Insects Injurious to Fruit Trees*,' says: If we carefully examine, late in the autumn, or early in the spring, our plants and trees, we shall see the eggs lie exposed close together on shoots like grains of gunpowder. The shoots and bark should be carefully washed over with liquid loam, garden earth, or whitewash, so that they may be completely covered by it. By this means all the eggs will be certainly killed, if the wash is not swept away by rain.

MARKETS.

NEW YORK MARKET, February 15, 1855.

Flour, extra Genesee	$10 75	@	12 00
" Canadian, (in bond)	8 87	@	9 00
" Genesee, (fancy)	10 00	@	10 37½
" Michigan and Indiana, extra	9 37	@	10 00
" Ohio, (fancy bbls)	9 25	@	9 37
" Michigan, do	9 25	@	9 31½
Wheat, white Genesee	$ 2 48	@	2 50
" Canadian, (in bond)	2 10	@	2 20
" Ohio	2 15	@	2 28
" Michigan	2 37	@	2 40
" Mixed Western	2 05	@	2 15
Corn, southern and western	1 00	@	1 04
Barley	1 12	@	1 20
Oats, western	67	@	68½
" River and Canadian	65	@	66

Beeves, 1st quality per lb, 11 @ 11½ cts. 2d quality, 10½@10 @ 10¼. Inferior, 9 @ 10 cts.

Sheep, common, per head $4.50 @ $6.00. Extra, $8.00 @ $12.

Swine—Large hogs, corn fed, for packing, dead weight, 7½@7¾c. Do. live weight, 5½ @ 6c. Ohio, corn fed hogs for retailing, live weight, 5¾ @ 6c.

CAMBRIDGE CATTLE MARKET.—Beef, extra, $8.50 per cwt.; 1st quality, $8; 2d quality, $7 a 7.50; 3d quality, $6.50 a 6.75; ordinary, $6.25. Hides per cwt. $5.50 a $5; Tallow $8.50 a $9; Pelts $1 a 1.25; Calf Skins 12c per lb; Barrelling Cattle $6.75 a $7.50 per 100 head; Veal Calves $4 a $4.50, $5 a $6. About 60 in.

Sheep and Lambs—2,018 at market. Extra, $6 a 6.50 a $7 a $10. By lot, $2½ a $2¾ a $3 a $4½.

REMARKS.—The market is largely attended by buyers. Sales are firm at quotations. The market is not quick, as there is more stock in than was anticipated. There is a good demand for Sheep, there being more purchasers from a distance than usual.

ADVERTISEMENTS,

To secure insertion in the FARMER, must be received as early as the 10th of the previous month, and be of such a character as to be of interest to farmers. TERMS—Two Dollars for every hundred words, each insertion, PAID IN ADVANCE.

WM. H. LOOMIS,

WHOLESALE and Retail dealer in Fruit and Ornamental Trees, Plants and Shrubs, of all the leading and most popular varieties. Standard and dwarf trees of Apples, Pears, Plums, Peaches, Cherries, &c., all vigorous, stockey and well formed.

Also, a general assortment of Gooseberries, Currants, Raspberries, &c. &c. Ornamental trees and shrubs of every variety; Roses a large collection; Green House plants can be furnished on the shortest notice. Also a large quantity of Field and Garden Seeds on hand, and for sale at the lowest cash prices. Address (post-paid) Agricultural Rooms, South Bend, Ind.

March, 1855.—tf. WM. H. LOOMIS.

BRAHMA POOTRA FOWLS FOR SALE.

I HAVE on hand and for sale, 30 of the best pure blood Brahma Pootra fowls, to be found in the country. Terms made known on application to W. ROADES,

March, 1855.—1t 84 Buffalo-st., Rochester, N. Y.

"GET THE BEST."

WEBSTER'S QUARTO DICTIONARY.

WHAT more essential to every family, counting room, student, and indeed every one who would know the right use of language—the meaning, orthography, and pronunciation of words, than a good English DICTIONARY?—of daily necessity and permanent value.

WEBSTER'S UNABRIDGED

is now the recognized Standard, "constantly cited and relied on in our Courts of Justice, in our legislative bodies, and in public discussions, as entirely conclusive," says Hon. JOHN C. SPENCER.

CAN I MAKE A BETTER INVESTMENT?

Published by G. & C. MERRIAM, Springfield, Mass.—sold by all Booksellers. Sold by D. M. DEWEY,

March, 1855.—1t Arcade Hall, Rochester, N. Y.

GENEVA NURSERIES.

FRUIT AND ORNAMENTAL TREES, &c.—The subscribers offer for sale the coming spring a choice lot of the following kinds of Trees of large size: Horse Chesnut, Mountain Ash, Balsam Fir, large and fine shaped. A large lot of Apple Trees, 1 & 4 years old. 20,000 Plum Stocks; a few thousand French Quince; 50,000 Osage Orange, 1 and 2 years; 20,000 Arbor Vitæ, 2 years, bushy and fine; 30,000 1 year transplanted. A large lot of Basket Willow Cuttings, best kinds; 30 of the leading kinds of Strawberries, including McAvoy's superior, McAvoy's extra red, Walker's seedling, Cresent seedling, Monroe seedling, Monroe scarlet, Lizzie Randolph, Burr's New Pine, Boston Pine, Moyamensing Pine, Black Prince, Large Early Scarlet. A large lot of Downing's Colossial Rhubarb. Prices moderate.

March, 1855.—1t W. T. & E. SMITH, Geneva, N. Y.

SUGAR GROVE FARM,

7 Miles from Dayton, owned by Jas. McGrew.

THE undersigned, successors of Jas. Sumpter & Co., will continue the business of said firm and fill all the contracts made by it in Ohio and Illinois, and being thankful for past favors would now solicit future patronage. We design prosecuting our business with redoubled energy. We have no hesitancy in stating that we have the largest and best lot of Osage Orange plants ever grown on the continent, owing to the fact that the seed was planted where they did not suffer from the severe drouth that has so generally prevailed throughout the country. We also import our own seed direct from Texas; it shall be fresh and of the best quality. All of which is warranted and will be sold at the lowest prices.

Full directions for raising plants, Setting, Cultivating and Trimming in a manner that will secure success, will accompany each lot of seed and plants sold.

We continue to plant, cultivate, trim and mature a complete fence at from 75 cts. to $1,00 per rod, one-third to be paid when planted, and the balance when completed. Hedges set and warranted at from 30 to 40 cts. per rod. Hedges grown, for what disinterested persons will say they are worth, when matured. Hedges completely grown at $1,00 to $1.25 per rod, to be paid when a thorough fence is matured.

We wish a large number of business men, living in localities where hedging is needed, to take hold with us in the planting and growing of hedges, the sale of plants, seed, &c. Those having the confidence of their neighbors, shall receive a liberal offer. Let us hear from you gentlemen. The enterprise is not only laudible, but will pay. McGREW, LEAS & CO.

March, 1855.—3t Dayton, Ohio.

THOROUGH-BRED MARES FOR SALE.

ON account of the owners leaving the country, two young full-blooded mares are offered for sale low. They are of good size and form, and in all respects desirable animals for breeders of stock. They can be seen by application to RICHARD S. CHARLES, Belvidere, Allegany Co., N. Y., who can give all information in regard to pedigree, price, &c.

Feb. 1, 1854.—3t.

PERUVIAN GUANO NO. 1,

WITH Importer's brand on each bag, $48 per ton, of 2,000 lbs. Any quantity under one ton 2½ cents per lb.

IMPROVED SUPERPHOSPHATE OF LIME manufactured by Deburgh, Paterson, or Coes, $45 per ton of 2,000 lbs.

BONE DUST, three different varieties, $2, $2.25, $2.50 per bbl.

Poudrette, Plaster of Paris, pulverised charcoal. For sale by A. LONGETT,

March, 1855.—2t No. 34 Cliff St., near Fulton, New York.

FOR NATIVES AND FOREIGNERS,

NATIVE AND ALIEN.

THE NATURALIZATION LAWS OF THE UNITED STATES, AND STATE OF NEW YORK.

TOGETHER with all the decisions, and other information necessary to a full understanding of the subject. Also, all the forms, &c. Neutral in character, and designed for all who are interested in this all-absorbing question. Compiled by a member of the Bar. And useful to Legislators, Lawyers, or the masses. Price, *single* 25cts; by the dozen $2,00. On the receipt of the price by mail, the work will be sent free of postage to any address

N. B. Book agents can make $2 a day clear in selling this work. Address, D. M. DEWEY.

March 1, 1855. Arcade Hall, Rochester, N. Y.

HIGHLAND NURSERIES, NEWBURGH, N. Y.

A. SAUL & CO., in calling the attention of the public to their establishment, deem a lenghtened notice unnecessary. They would merely state, that the stock of their nurseries which they offer for sale the coming spring, is full in every department and of the best quality, including all the recently introduced PEARS, and other fruits, both *dwarf* and Standards. Also all the novelties in the Ornamental department, both deciduous and Evergreen, including the new and rare Conifers, Weeping trees, Shrubs, &c., as well as a full stock of all the leading articles to be had in the trade.

For particulars in detail they refer to their general Catalogue, a new edition of which is ready and will be forwarded to all *post-paid* applications, on enclosing a P. O. Stamp *to pre-pay* the same.

A large quantity of Hedge plants, Osage Orange, Buckthorn, &c.

Dealers, and planters of trees on a large scale, dealt with on the most liberal terms.

Newburgh, March 1, 1855.—2t.

DRAINAGE AND SEWERAGE PIPE MACHINE.

CHARNOCK'S PATENT.

BY this Machine, Drainage and Sewerage Pipes of all descriptions, as well as perforated and other Bricks, Flooring Tiles &c., are molded with the greatest facility and precision.

A man and three boys can turn out from 5,000 to 10,000 feet of pipes per day, according to sizes; and if worked by horse, steam or water power, a proportionate increase will be obtained.

This Machine is in extensive operation in England, where, in addition to the testimony of numerous Tile Makers, as well as that of some of the first Machinists of the day, the following Prizes have been awarded to it:

By the Yorkshire Agricultural Society, at its annual meeting, 1845, as the first Tile Machine with a continuous motion, ... £5 0 0

By the same Society, the following year, as the best Machine of the day, ... 10 0 0

By the Lancashire Agricultural Society, at its annual meeting, 1845, ... Silver Medal.

By the Highland Agricultural Society, at its annual meeting in 1846, as the best Machine, ... 5 0 0

At the meeting of the New York State Agricultural Society, at Saratoga (1853), a Working Model of this Machine was awarded the SILVER MEDAL AND DIPLOMA; and at the Fall Exhibitions the same year of Lower and Upper Canada, held respectively at Montreal and Hamilton, the same Model was awarded a DIPLOMA FROM EACH SOCIETY. It was awarded the FIRST PRIZE AND DIPLOMA at the recent Exhibition in London, C. W.

The price of the Machine is £50 (half cash and remainder at six months), with five Dies for Pipes. Brick and other Dies at a moderate charge.

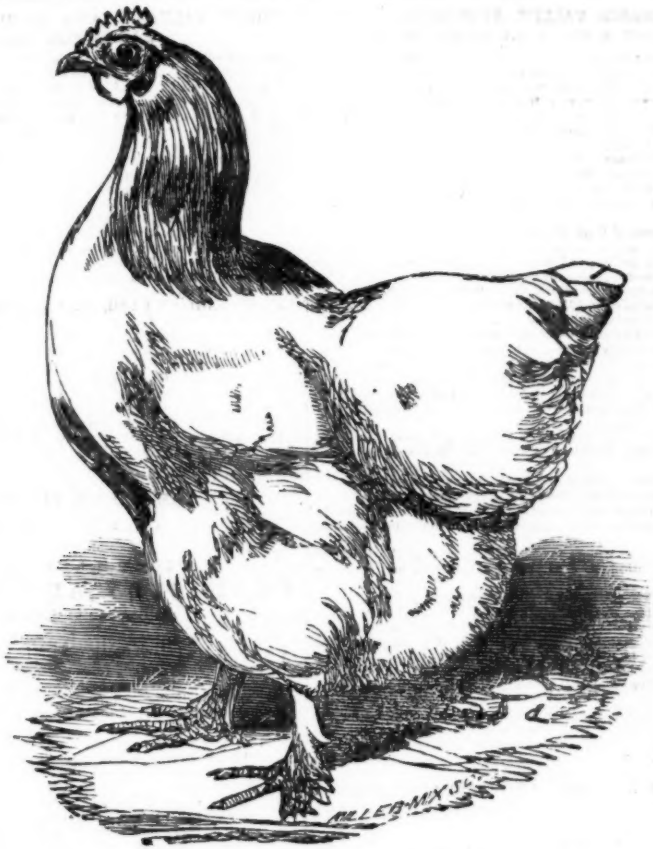
☞ THE PATENTEE GUARANTEES THE EFFECTIVE WORKING OF THE MACHINE. ☜

☞ All orders to be addressed to

JOHN H. CHARNOCK,

Drainage Engineer, Hamilton, C. W., the Patentee.

January 1, 1855.—tf



PREMIUM FOWLS.---D. P. NEWELL'S LIST.

Premiums Awarded at New York State Poultry Show, at Albany, Feb., 1854, to D. P. Newell of Rochester N. Y.

For the largest and best variety bred by exhibitor, *Silver Cup*,	$25 00
For the best Brahma Pootras,	5 00
For the best Dominique Shanghaes,	5 00
On Ducks,	6 00

Premiums Awarded at the New York State Fair, at Utica, Sept., 1852, to D. P. Newell, of Rochester N. Y.

Best lot of pure bred Fowls,	$10 00
White Surry Dorkings, (Imported)	3 00
Shanghaes, Chittagongs and Malays,	3 00
Jersey Blues,	2 00

Premiums Awarded at the New York State Fair, at Saratoga, Sept., 1853, to D. P. Newell, of Rochester N. Y

The First Premium on Brahmas, Shanghaes, and Games,	$15 00

Premiums Awarded at Monroe County Fair, to D. P. Newell, of Rochester, in Se t., 1852 and 1853.

Best display of Poultry, *Silver Medal*, and on varieties, eighteen premiums,	$16 00

I now have thirty-three different varieties of Fowls for sale. Also, Eggs of the same.

D. P. NEWELL,
Rochester, Monroe Co., N. Y.

March, 1855.

GENESEE VALLEY NURSERIES.

A. FROST & CO., ROCHESTER, N. Y.,

SOLICIT the attention of amateurs, orchardists, nurserymen, and others about to plant, to their extensive stock of well-grown Fruit and Ornamental Trees, Shrubs, Roses, &c. &c.

The Nurseries are now very extensive, and embrace one of the largest and finest collections in the country, and their stock is far superior to any that they have before offered. It is partly comprised in the following:

Standard Fruit Trees.—Apple trees, eighty varieties; Pear trees, one hundred varieties; Cherry trees, sixty varieties; Plum trees, forty varieties; Peach trees, thirty varieties; Nectarine, six varieties; Apricot, six varieties; and other kinds, comprising every sort of merit.

Dwarf and Pyramid Fruit Trees, of every description, for cultivation in orchards and gardens, have received particular attention. They embrace the following kinds, and comprise nearly the same number of sorts as are grown for standards:

Pears upon the best European Quince stocks.

Apples upon Paradise and Doucain stocks.

Cherries upon Cerasus Mahaleb stocks.

Small Fruits, as Currants, eighteen varieties; Gooseberries, sixty varieties; Grapes, Native and Foreign, twenty-five varieties; Raspberries, six varieties; Strawberries, twenty varieties; and other miscellaneous fruits, as well as esculent roots, in variety.

Deciduous and Evergreen Trees, for lawns, parks, streets, &c.

Evergreen and Deciduous Shrubs, in great variety, including four hundred sorts of Roses.

Hedge Plants—Buckthorn, Osage Orange and Privet; and for screens and avenues, American Arbor Vitæ (White Cedar), Norway Spruce, &c.

Herbaceous Plants.—A very select and extensive assortment.

Green-house and Bedding Plants, of every description.

All articles are put up in the most superior manner, so that plants, &c., may be sent thousands of miles and reach their destination in perfect safety.

Parties giving their orders may rely on receiving the best and most prompt attention, so that perfect satisfaction may be given the purchaser.

The following descriptive Catalogues, containing *prices*, are published for *gratuitous* distribution, and will be mailed upon every application; but correspondents are expected to enclose a one cent postage stamp for each Catalogue wanted, as it is necessary that the postage should be prepaid:

No. 1. Descriptive Catalogue of Fruits for 1854-5.

No. 2. Descriptive Catalogue of Ornamental Trees, Shrubs, Roses, &c. &c., for 1854-5.

No. 3. Wholesale Catalogue or Trade List, just published for the fall of 1854 and spring of 1855, comprising Fruits, Evergreens, Deciduous Trees, &c. &c., which are offered in large quantities.

October 1, 1854.—tf

CATALOGUE OF RARE AND VALUABLE SEEDS.

RAISED AND PUT UP BY I. W. BRIGGS, MACEDON, WAYNE COUNTY, N. Y.

Orange Watermelon, from China, per paper,	25 cents.
Ice Cream, or White Sugar do., of Alabama,	25
Citron Nutmeg Muskmelon,	12½
The Celebrated Japan Pea,	12½
California Muskmelon,	12½
Watermelons—Mountain Sprout, Mountain Sweet, Mexican and Sandwich Island, 2 varieties each,	06
Squashes—*Winter*—Sweet Potato, Vegetable Marrow and Polk; *Summer*—Apple, Crookneck and Scallop,	06
Mammoth Red and Grape Tomatoes, each,	06
White Vegetable Egg—looks like an egg,	06
Double Sunflower—the "Floral King,"	06
Victoria Rhubarb—the best pie plant,	06
Flat Dutch Cabbage—the best winter,	06
Pop Corn (3 varieties), Adams' Early (a field corn), very early Sweet Corn, and late, large do., each,	06
Poland Oats, per bushel of 40 pounds,	$1.00
Mexican Wild Potatoes, per bushel,	1.00

☞ Seeds sent by mail, free of postage. Oats and Potatoes shipped as directed by railroad or canal. Address, post-paid, with money enclosed, I. W. BRIGG, County Line Farm,

Dec. 1, 1854.—tf West Macedon, Wayne Co., N. Y.

CUTTER RIGHTS FOR SALE

WE will test our Hay, Stalk and Straw Cutter, patented November 8th, 1853, for speed, ease and durability, against any other in the United States. J. JONES & A. LYLE.

☞ For further information, address JONES & LYLE, Rochester, N. Y. February 1, 1854.—tf

MERINO SHEEP.

THE subscriber will sell a few Spanish Merino Sheep—bucks and ewes—of undoubted purity of blood. He will also dispose of a part of his stock of imported FRENCH Merinos.

Gentlemen purchasing from this flock can have the sheep forwarded to the principal Western towns at my risk.

Sept. 1, 1854—tf R. J. JONES, Cornwall Vt.

THREE VALUABLE AND HIGHLY CULTIVATED FARMS FOR SALE.

THE subscriber offers at private sale three most desirale Farms, situate in the vicinity of Newark Licing county, Ohio, to wit:

1st. His CHERRY VALLEY FARM, on the old Columbus road, two miles west of Newark, containing two hundred acres, one hundred and forty of which are cleared. On this farm are two large young orchards, two large new frame houses, a smoke-house, barn, new stable for fifty horses, sheds, chicken-houses, hog-pens, &c., a large garden handsomely fenced in, and indeed every convenience and even luxury that can be desirable on a farm. This farm is in the highest state of cultivation, no labor or expense having been spared to render it a model farm in this, as in all other particulars.

2d. His RICHLAND FARM, also known as the Taylor or Fullerton Farm, situate on the road to Hebron and also on the Ohio Canal, two miles from Newark, and containing 139 acres (100 of which are cleared). There is a good log house and stable on this farm which is in a high state of cultivation, and cannot be surpassed for fertility.

3d. His ENGLISH FARM, situated on Ramp Creek, on one of the roads to Hebron, four miles from Newark, and containing 123 acres, about 80 of which are cleared. On this farm are two small old frame houses, a large frame barn, a new saw-mill, and corn-cracer and crusher. This farm is also in a highly cultivated state.

Also, a number of OUT LOTS, of every size, for sale.

Persons desirous of purchasing a good farm, in admirable order, will find it to their advantage to call on the subscriber at his house in Newark, Ohio, where he can be seen at all times.

Time will be given to the purchaser if desired, and possession on the first day of April, 1855. N. B. HOGG,

January 1, 1855—3t Newark, Ohio.

THE SCIENCE OF NATURE.

A NEW SCHOOL BOOK,

ENTITLED

FIRST LESSONS IN

CHEMISTRY AND GEOLOGY,

As Applied to Agriculture.

BY J. EMERSON KENT, A. M., M. D.

A NEW school book—the first American work ever issued as the first book, or "First Lessons in Chemistry and Geology, as applied to Agriculture," designed as the first step for the young, to be used in all our common schools, is now submitted to the educational public. Some indeed protest against the introduction of all modern improvements in making the earth productive; still the great agricultural interests of our nation depend upon a rising generation of practical farmers, who will till the soil as much by a comprehensive knowledge of the laws of chemistry, as by the sweat of the brow.

The subject of agricultural chemistry cannot but soon commend itself to the world as the most important of all studies, and, in fact, the wealth of this country would be doubled within one year were all that saved which is now lost by stupid, bungling agriculture. A volume of recommendations could be given to the public, but it is not necessary.

School Committees and Teachers will be furnished with a copy, gratis, for examination, by mail, post-paid, on application to the undersigned. Price 25 cents.

DAYTON & WENTWORTH, Publishers,

86 Washington street, Boston, Mass.

Also, for sale in quantities at F. Cowperthwait & Co., Philadelphia; Cady & Burgess, New York; Phinny & Co., Buffalo, N. Y.; Darrow & Brother, Rochester, N. Y.; William Wilson, Poughkeepsie, N. Y.; H. M. Rulison, Cincinnati, O.; and by all other booksellers in the United States.

N. B.—A few men of the right ability are wanted to travel through every State in the Union, and introduce this work into schools. A liberal commission will be paid. Gentlemen who travel for health or recreation will find this occupation a lucrative and agreeable employment. Address as above. Nov. 1, 1854.—6t

NOTICE.

THE Subscriber now offers for sale two very superior Stallions One will be six years old next May, he has taken nine premiums; took the first in Toronto at the Provincial Show, 1852. The other will be four next June, he took the second premium in Hamilton, at the Provincial Show, 1853. They were both sired by the far famed Old Clyde, and who far surpassed any horse that ever came against him. Their dam was a very superior Mare. For further particulars apply to the subscriber. Address

WM. WADDELL,

Feb. 1—2t Pickering, Claremont P. O., C. W.

"FINE STOCK."

PREMIUM AT OHIO AND INDIANA STATE FAIRS.

PURELY bred FANCY FOWLS, fifteen varieties. Also, LOP-EARED RABBITS, and SUFFOLK and ESSEX PIGS, bred from the best importations.

W. S. LUNT,

Findlay, Hancock Co., Ohio.

KETCHUM'S MOWER with REAPER ATTACHMENT,

MAN ACTURED BY HOWARD & CO., BUFFALO, N. Y.

KETCHUM'S celebrated Mowing Machine has been improved by the addition of a *Reaper Attachment*, and we now offer it as a Mower, or as a Mower and Reaper combined, with full confidence that it is the most perfect and successful Machine now in use. The change from a Mower to a Reaper, (which means has been patented,) is effected by simply enlarging the main wheel, by circular sections, bolted to the rim of the wheel. Some of the advantages obtained by this arrangement are: FIRST—Raising the cutters sufficiently high for cutting grain. Second—Lessening the motion of the knives, *without any change of gearing*, which is very desirable in cutting grain, as much less motion is required. Third—Reducing the draft of the Machine at least *one-third*. Fourth—Raising the cogs of the driving wheel, thereby preventing them being filled with dirt, as they otherwise would be, on stuble land. Fifth—Attaining the above named objects *without the least change* of any part of the Mower. We shall build for the harvest of 1855 the Combined Machines, with wrought iron frames and finger bars. Those manufactured expressly for Mowing will all have wrought iron finger bars, but a portion of them with wood frames. Each Machine will have a good spring seat, and every part made in the most substantial manner, and warranted durable, with proper care. We have reduced the weight of the Mower about one hundred and fifty pounds, which we have found desirable, and have no doubt will improve them, by lessening their draft. We shall take the utmost pains to have our knives made of the best of steel, and well tempered.

We offer our Machines, and warrant them capable of cutting and spreading from ten to fifteen acres of any kind of grass per day; also warrant them capable of cutting the same amount of grain per day.

RUGGLES, NOURSE, MASON & Co., Worcester, Mass., are manufacturing, and have the *exclusive* right to sell in the N. E. States. They are also manufacturing a one horse Mower, which they have a right to sell in any of the United States, except the Western.

SEYMOUR, MORGAN & Co., of Brockport, N. Y., manufacture the Mowers for the States of Michigan, Illinois, and Iowa.

WARDER, BROKAW & CHILD, of Springfield, Ohio, manufacture for the States of Kentucky, Missouri, Southern Indiana and Ohio, except the Western Reserve, which will be furnished by JAMES M. CHAMPLIN, Cleveland, Ohio.

Price of Mower, with extras, is $110, Mower and Reaper $125, in Buffalo. Feb. 1—2t

BRITISH PERIODICALS.

LEONARD SCOTT & CO., New York, continue to re-publish the following British Periodicals, viz.:

THE LONDON QUARTERLY (Conservative). THE EDINBURGH REVIEW (Whig). THE NORTH BRITISH REVIEW (Free Church). THE WESTMINISTER REVIEW (Liberal). BLACKWOOD'S EDINBURGH MAGAZINE (Tory).

The present state of European affairs will render these publications unusually interesting during the forthcoming year.

Arrangements are now permanently made for the receipt of EARLY SHEETS from the British Publishers, by which we are enabled to place ALL OUR REPRINTS in the hands of subscribers, about as soon as they can be furnished with the foreign copies. Although this involves a very large outlay on our part, we shall continue to furnish the Periodicals at the same low rates as heretofore, viz:—

For any one of the four Reviews, $3 per annum. For any two of the four Reviews, $5. For any three of the four Reviews, $7. For all four of the Reviews, $8. For Blackwood's Magazine, $3. For Blackwood and three Reviews, $9. For Blackwood and the four Reviews, $10.

☞ Payments to be made in all cases in advance. Money current in the State where issued will be received at par.

CLUBBING.—A discount of twenty-five per cent. from the above prices will be allowed to Clubs ordering four or more copies of any one or more of the above works. Thus: Four copies of Blackwood, or of one Review, will be sent to one address for $9; four copies of the four Reviews and Blackwood for $30; and so on.

POSTAGE.—In all the principal Cities and Towns, these works will be delivered, through Agents, Free of Postage. When sent by mail, the Postage to any part of the United States will be but TWENTY-FOUR CENTS a year for "Blackwood," and but FOURTEEN CENTS a year for each of the Reviews.

Remittances and communications should always be addressed, post-paid, to the Publishers,

LEONARD SCOTT & CO.,
54 Gold Street, New York.

☞ N. B.—L. S. & CO., have recently published, and have now for sale, the "FARMER'S GUIDE," by Henry Stephens, of Edinburgh, and the late Prof. Norton, of Yale College, New Haven, complete in 2 vols., royal octavo, containing 1600 pages, 14 steel and 600 wood engravings. Pride, in muslin binding, $6.

☞ This work is not the old "Book of the Farm," lately resuscitated and thrown upon the market.

Contents of this Number.

The Feeding of Cities 73
Roots and their Culture 74
Where shall I plant my Orchard? 75
What breed of Cows would you recommend? 77
Drain Level 79
Plaster of Paris 80
Letter from Minnesota 80
Lice on Cattle 80
Italian Rye Grass; its culture and advantages 81
Seeding of lands to grass 82
Letter from Virginia 83
Feeding of Horses 83
Drainage 83
Breaking Colts 84
The Culture of Sweet Potatoes 85
Gypsum or Plaster of Paris 85
Olive versus Lard Oil 86

HORTICULTURAL DEPARTMENT.

Pomological Society of Western New York 87
Hints on Grafting 87
Notes on the Weather, etc 88
Shade Trees 88
Cultivation of Flowers 89
Osage Orange Hedges 89
Diseased Apples 90
Culture of Apples at the West 91
Genesee Valley Horticultural Society 93
Peach Worm 94
Grape Vines—Bearing and Pruning 94
Liquid Manure for the Garden 95
The Auricula 95
Early Tomatoes 95

LADIES' DEPARTMENT.

Original and selected Recipes 96
"The Old Woman" 96

EDITOR'S TABLE.

What shall I study? 97
Italian Rye Grass 98
New Rotary Engine 98
Experiments 98

ILLUSTRATIONS.

Alderney or Jersey Cow 77
Drain Level 79
Method for Breaking Colts 84
Grape Vines—The Cane, Spur and Fan Sytems 94

STEREOTYPED BY J. W. BROWN, ROCHESTER, N. Y.

THE

GENESEE FARMER

FOR 1855.

In presenting his Prospectus for VOLUME XVI., SECOND SERIES, of the GENESEE FARMER to its patrons and friends, the undersigned returns his sincere thanks for the cordial appreciation and generous support extended during the past and previous years. The price will remain unchanged, though all the expenses connected with the mechanical department are much greater than in previous years; and it is only by the voluntary aid of the friends of agricultural progress that he is enabled to furnish so large an amount of reading matter in his monthly issues.

He will be assisted in the Editorial Department by Mr. W. D. ALLIS, who has been a regular contributor to its columns during the past year. Mr. JOSEPH FROST will continue as Horticultural Editor.

Increased efforts will be made to render the GENESEE FARMER worthy of support. Each subscriber is respectfully solicited to renew his subscription, and present the claims of the FARMER to his friends; and the result will enable the proprietor more than ever to advance the interests of its readers.

PREMIUMS.

To enlarge the usefulness by extending the circulation of the GENESEE FARMER, the undersigned will pay the following PREMIUMS on subscriptions to Volume XVI., second series:

FIFTY DOLLARS,

IN CASH, to the person who shall procure the LARGEST NUMBER OF SUBSCRIBERS in any County or District in the United States or Canadas, at the club prices.

FORTY DOLLARS,

IN CASH, to the one who shall procure the SECOND LARGEST LIST, as above.

THIRTY DOLLARS,

IN CASH, to the one procuring the THIRD LARGEST LIST.

TWENTY DOLLARS,

IN CASH, to the one procuring the FOURTH LARGEST LIST.

TEN DOLLARS,

IN CASH, to the one procuring the FIFTH LARGEST LIST.

In order to reward every one of the friends of the GENESEE FARMER for his exertions in its behalf, we will give to those not entitled to either of the above premiums, the following BOOKS, free of postage, or EXTRA PAPERS as may be preferred:

1. To every person who sends **SIXTEEN** subscribers, at the club terms of thirty-seven cents each, ONE EXTRA COPY OF THE FARMER, or a COPY OF LIEBIG'S LETTERS ON CHEMISTY AND AGRICULTURAL CHEMISTY (pamphlet edition).

2. To every person sending for **TWENTY-FOUR** copies, as above, any AGRICULTURAL BOOK valued at FIFTY CENTS, or TWO EXTRA COPIES OF THE FARMER.

3. To every person ordering **THIRTY-TWO** copies, any AGRICULTURAL BOOK worth SEVENTY-FIVE CENTS, or THREE EXTRA COPIES OF THE FARMER.

4. To every person ordering **FORTY** copies, any AGRICULTURAL BOOK valued at ONE DOLLAR, or FOUR EXTRA COPIES OF THE FARMER.

5. To every person ordering **FORTY-EIGHT** copies, any ARGRICULTURAL BOOK worth ONE DOLLAR AND TWENTY-FIVE CENTS, or FIVE EXTRA COPIES OF THE FARMER.

For larger numbers, books or papers given in the same proportion. To save cost to our friends, we pre-pay postage on all books sent as premiums. Persons entitled will please state whether they wish books or extra papers, and make their selection when they send orders, if they desire books; or if they have not obtained as many subscribers as they intend to, we will delay sending until the club is full, if so requested. We do not require that all the papers of a club should be sent to one post-office. If necessary for the convenience of subscribers, we are willing to send to as many different offices as there are members o the club. We write the names on each paper, when a number are sent to the same office, if desired; but when convenient, Postmasters would confer a favor by having the whole number ordered at their own office, sent to their own address.

☞ As all subscriptions commence anew with the year, places where the FARMER was never before taken will stand an equal chance in the competition for premiums.

☞ BACK VOLUMES of the FARMER will be furnished, if desired, and counted the same as new subscribers. We shall keep a correct account of the subscribers sent by each person, and in the JULY NUMBER WE SHALL ANNOUNCE THE PREMIUMS.

☞ Specimen numbers, show-bills, &c., sent to all post-paying applicants. All letters must be post-paid or free. Subscription money, if properly enclosed and registered, may be mailed at our risk.

DANIEL LEE, Publisher and Proprietor.